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AUTHOR	Fuchs, Lynn S.; Mathes, Patricia G.
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ABSTRACT

This report studied intermediate grade students identified as learning disabled in a resource room setting to examine the effects of adapting repeated reading and sustained reading while manipulating level of text difficulty in a peer-mediated format. Twelve resource room teachers identified 67 students with learning disabilities and reading problems. Teachers then provided either the sustained reading (in which pairs of students read orally to each other), repeated reading (in which pairs of students read each passage three times), or control interventions. Students were assigned randomly to read either instructional or independent level text. Students in each group were trained in each of the classwide peer-mediated reading interventions. The intervention was implemented 3 times a week for 10 weeks. Results suggest that sustained reading within a classwide peer-mediated reading procedure is superior to typical reading instruction for developing fluency. However, neither sustained reading or repeated reading were superior to typical instruction in increasing comprehension. There also appeared to be no effect for level of text difficulty. Questionnaires completed by teachers and students indicated high levels of satisfaction with both treatments. (Contains 61 references.) (DB)

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Final Report:
Peer-Mediated Reading Instruction in Special Education Resource Room Settings

Grant #H023B00026

Lynn S. Fuchs
Patricia G. Mathes
George Peabody College of Vanderbilt University
Department of Special Education

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Running head: PEER-MEDIATED RESOURCE READING

EC 305691

Peer-Mediated Reading Instruction in Special Education Resource Room Settings

This final report is organized as follows: (a) presentation of the context, purpose and rationale of the grant, (b) a listing of grant objectives, (c) description of the grant workscope and related accomplishments, (d) presentation of the study's methodology, (e) description of the results, and (f) discussion of the implications of the results. Then in the Appendices, procedural manuals, research reports, and measurement instruments are provided.

Purpose and Rationale

An estimated one in three children experience significant problems in learning to read (National Commission of Excellence in Education, 1983). Of these students, a large portion are often evidence slow, hesitant, effortful reading (e.g., Idol, 1988). It has been hypothesized that this marked lack of reading fluency impairs not only word recognition success, but also comprehension (e.g., Beck, 1985; Idol, 1988; Juel, 1988). Evidence suggests that for many students with disabilities, this inability to recognize words automatically presents the biggest hindrance to comprehension (e.g., Spear & Sternberg, 1986). Furthermore, increasing students' reading fluency has been demonstrated to lead to increased comprehension (Dahl, 1979; Dowhower, 1987; Herman, 1985; Samuels, 1979).

One reason why many students with learning disabilities do not develop adequate reading proficiency is that they are not afforded adequate opportunity to practice reading (Allington & McGill-Franzen, 1989; Haynes & Jenkins, 1986; Leinhardt, Zigmond, Cooley, 1981; Nagy & Anderson, 1984; O'Sullivan, Ysseldyke, Christenson, & Thurlow, 1990; Simmons, Fuchs, Fuchs, Mathes, & Pate, 1990). Research on effective instruction repeatedly illustrates that students' opportunity to respond academically is a critical factor related to achievement (Brophy & Good, 1986; Greenwood, Delquadri, & Hall, 1984; Rosenshine & Stevens, 1986). Related research suggests that the opportunities students have to respond to academic tasks is a causal and direct factor in their academic achievement: More opportunities to respond result in greater achievement, while fewer opportunities to respond result in less academic attainment (e.g., Greenwood et al., 1984). Thus, it is imperative that teachers implement strategies that structure the learning environment so that students will respond actively to academics.

Current State of Reading Instruction

Descriptive studies indicate that regular and special education reading instruction, as currently structured, does not provide an environment in which students with learning disabilities are afforded the necessary opportunities to practice reading to facilitate reading growth (Haynes & Jenkins, 1986; Gelzheiser & Meyers, 1991; O'Sullivan et al., 1990; Simmons et al., 1990). Observations of special education reading teachers indicate they provide less group instruction and more individual seatwork than their regular education counterparts (Allington & McGill-Franzen, 1989; Haynes & Jenkins, 1986; O'Sullivan et al., 1990). Studies indicate that special education students spend a large percentage of their time waiting, off-task, and working independently on indirect reading activities such as worksheets (Allington & McGill-Franzen, 1989; Gelzheiser & Meyers, 1991; Haynes & Jenkins, 1986; Leinhardt et al., 1981). Haynes and Jenkins (1986) found that children with disabilities sent to resource rooms for reading instruction spent 52% of their time doing worksheets and only 25% of their time actually reading.

Although the picture looks bleak for special education reading classes, time usage in regular reading classes is no better (Gelzheiser & Meyers, 1991). Low performing and mainstreamed students spend approximately two-thirds of their reading periods independent of the teacher and engaged in nonreading or indirect reading activities (Allington & McGill-Franzen, 1989; Haynes & Jenkins, 1986). Additionally, when students are being instructed directly by the teacher in reading, they spend about 70% of their time passively watching and listening to the teacher, with little or no opportunity to respond; they spend only a small fraction of time actually reading (O'Sullivan et al., 1990; Simmons et al., 1990). In one observational study, low-performing fourth graders were given less than 10 seconds of actual reading practice in a 2-week period (Delquadri, Greenwood, Whorton, Carta, & Hall, 1986).

Data also suggest that students most at risk for school failure may receive less reading instruction and practice than their higher-performing peers (Allington, 1984; Hall, Delquadri, Greenwood, & Thurston, 1982). Allington (1984) observed that as early as the first week of first grade, students at risk for qualifying for special education or remedial services received less reading practice and instruction. This translated into the at-risk students having the opportunity to read only 16 words of print as compared to higher achieving students being afforded the opportunity to read 1,933 words while being instructed by the same teachers. Similarly, it has been observed that at-risk first graders averaged no more than 20 seconds of direct reading practice during a reading instructional period (Hall, Delquadri, & Harris, 1977) and that teachers spent disproportionately more time with high performers, leaving little or no time for reading instruction for low performers (Hall et al., 1982). This trend continues as the years increase, resulting in an ever-increasing gap between the reading proficiency of different ability groups (Nagy & Anderson, 1984).

The result of these differences in reading experiences has been labeled by Stanovich (1986) as the "Matthew Effect" after a verse in the bible that discusses how the rich get richer and the poor get poorer (Matthew 25:29). He comments that, "The very children who are reading well and who have good vocabularies will read more, learn more word meanings, and hence will read even better. Children with inadequate vocabularies, who read slowly and without enjoyment, will read less and, as a result, have slower development of vocabulary knowledge, which will inhibit further growth in reading ability" (p. 381).

In sum, it appears that students with disabilities are not afforded necessary opportunities to read and that they actually receive less instruction than their higher achieving peers. Regardless of setting, students with disabilities appear to spend a good portion of their reading instruction waiting for the teacher, engaged in indirect reading activities and noninstructional activities, and passively watching and listening to the teacher. Opportunities to respond to the teacher's instruction are few, and active engagement in the act of reading is low.

Peer-Mediated Instruction

Peer-mediated instruction is one arrangement that structures the environment to increase students' opportunities to respond (Greenwood et al., 1984; Greenwood, Carta, & Kamps, 1990). Applications of some peer-mediated strategies in reading have resulted in students receiving double or triple the amount of reading practice (Greenwood, Delquadri, & Carta, 1988; Greenwood, Delquadri, & Hall, 1989). For example, students' opportunities to respond in a reading period increased from 28% to 78% when peer-mediated reading was implemented (Elliot, Hughes, &

Delquadri, 1984). Furthermore, studies have demonstrated that peer tutoring with students with disabilities can be effective in increasing reading achievement (Lamport, 1982; Simmons et al., 1990; Simmons, Fuchs, Fuchs, Pate, & Mathes, 1991; Top & Osguthorpe, 1987).

Peer-mediated instruction refers to an alternative teaching arrangement in which students mediate instruction for other students (Maheady, Harper, & Sacca, 1988). It occurs whenever a teacher arranges for students to be instructed by other students and represents an efficient and feasible use of available classroom resources.

Peer-mediated instruction is not a new idea. Its history has been traced back as early as the first century A.D. to Quintilian in his Institutio Oratoria in which he described an early cross-age tutoring program (e.g., Eiserman, Shisler, & Osguthorpe, 1987). Peer-mediated strategies were resurrected in this century within the context of the anti-poverty and compensatory education movement of the 1960's (e.g., Elliott, 1991). Since that time, peer-mediated instruction has been acclaimed as an intervention designed to correct underachievement and improve life outcomes of children at-risk for school failure, including students with disabilities (e.g., Gerber & Kaufman, 1981).

Beyond increasing reading practice, it is not clear if specific peer-mediated activities are best for increasing reading ability for students with disabilities. Unfortunately, comparisons of various peer-mediated reading treatments have rarely appeared in the literature (Mathes & Fuchs, 1991a). In fact, only one comparison of peer-mediated reading methods with students with disabilities appears in the literature (Simmons et al., 1991).

Reading techniques that traditionally have been teacher-directed have been adapted frequently for use as peer-mediated techniques (e.g., Mathes & Fuchs, 1991a). Two methods that appear to have adaptability as peer-mediated techniques are sustained oral reading practice (Adams, 1991, Greenwood et al., 1988) and repeated oral reading practice (Samuels, 1979, Simmons et al., 1991.)

Based on the theory of automaticity (LaBerge & Samuels, 1974), Samuels (1979) developed the method of repeated readings for fluency development. The purpose was to provide children adequate repetition on phonological units and words to develop automaticity of word recognition skills. Repeated reading has had considerable examination in the literature, and studies have documented significant gains in reading rate, accuracy and comprehension with poor and disabled readers (Dahl, 1979; Dowhower, 1987; O'Shea, Sindelar, & O'Shea, 1987; Roshotte & Torgesen, 1985).

Simmons et al. (1990, 1991) developed a peer-meditated application of repeated reading as one component of a multi-element peer-tutoring treatment. In this treatment, lower-performing readers (tutees) were paired with higher functioning readers (tutors) who monitored oral reading practice and documented and corrected word recognition errors. This method was used with selected pairs of students (Simmons et al., 1990) and as a classwide activity (Simmons et al., 1991).

Compared to repeated reading, sustained reading has not received much empirical attention. However, sustained reading practice frequently is advocated for improving reading achievement (Adams, 1990; Chall, 1983; Idol, 1988). Additionally, sustained reading has been demonstrated to increase the reading achievement of students with disabilities when students read orally to peers (Greenwood et al., 1990).

Unfortunately, repeated reading and sustained reading have never been compared directly. Thus, it is not clear which of the two methods is superior for improving reading fluency and comprehension. Without knowledge as to which method is better for effecting reading growth in students with disabilities, it is impossible to predict which might be better as a peer-mediated technique.

Text Difficulty

Although increasing opportunities to practice reading under supervision is an important step in addressing reading problems, it is also important to consider the actual text that students read. It is not clear how the difficulty of the reading text impacts either sustained reading or repeated reading. Research indicates that when text is too difficult for students (i.e., frustrational level), fluency disappears, word recognition errors become numerous, and students do not comprehend what they have read (e.g., Harris & Sipay, 1985; Richek, List, & Lerner, 1983). Thus, no benefit is likely to be gained by having students read frustrational level text (e.g., Adams, 1990). However, it is not known if students benefit more from practicing reading instructional level or independent level text. Instructional level text is material which the student can read with few word recognition errors after the teacher has introduced new words and prepared the student for the selection. Independent text is defined as material students can read with few errors without any teacher preparation (Harris & Sipay, 1985).

Objectives

The primary purpose of this study was to extend previous research by adapting repeated reading (O'Shea & O'Shea, 1988; Samuels, 1987) and sustained reading (Greenwood et al., 1988) for use in a peer-mediated format with students identified as learning disabled in resource settings, while manipulating and testing the effect of the level of text difficulty. A unique feature of this study was that the treatments were mediated by learning disabled peers. In both treatments, all participants served both as tutors and tutees.

Specifically, the objectives of this study were (a) to examine the effects of classwide peer-mediated reading instruction on reading fluency and comprehension with students identified as learning disabled, (b) to compare the methods of repeated reading (O'Shea & O'Shea, 1988; Samuel, 1987) and sustained reading (Greenwood et al., 1988) when conducted as part of a classwide peer-mediated treatment, (c) to explore the impact of having students read from instructional or independent level reading material on reading fluency and comprehension, and (d) to investigate the interaction between fluency development method and the level of text difficulty on reading fluency and comprehension.

The research questions investigated were:

1. Does classwide peer-mediated reading instruction increase the reading fluency and comprehension of students identified as learning disabled more than that of controls who receive teacher-directed resource reading instruction, when the amount of instructional time in each condition is the same?
2. Used in the context of classwide peer-mediated instruction, is repeated reading practice or sustained reading practice superior for effecting reading achievement?
3. Do students make greater gains during classwide peer-mediated reading instruction when they read from text at their instructional or independent level?
4. Is there an interaction between fluency development method and the level of text difficulty on reading fluency and/or

comprehension?

Workscope and Accomplishments

Toward accomplishment of the objectives set forth for this project, the following activities were carried out.

1. The treatments were piloted in a junior high resource room and refined based on this pilot.
2. A teacher manual for each treatment was developed. These manuals explicated the project's rationale as well as the actual reading procedures (see Appendices A and B).
3. Twelve resource room teachers who taught reading to students identified as learning disabled were recruited and randomly assigned to one of three groups: sustained reading, repeated reading, or control. These teachers then identified six students from their reading class to include in the sample. Each student had to have IEP objectives in reading and had to be labeled as learning disabled. Additionally, teachers were asked to identify students who read at least at the primer level. A total 77 students were identified. Several teachers identified more than the requested six students due to the high levels of student migration during the school year. Ten students moved during the course of the 10-week study, leaving a final sample of 67.
4. All students were pretested prior to the beginning of implementation of the treatments using counterbalanced forms of the reading test. Pretesting including administration of

placement tests for a commonly used basal reading series. Based on this test, students' instructional and independent reading levels were determined.

5. Students were assigned randomly to read either instructional or independent level text, and books were purchased accordingly. Each student in the study was provided his or her own reading book.
6. Students were trained in how to carry out each of the classwide peer-mediated reading interventions. Each classroom was trained by research staff. Each class required three 1-hour training sessions.
7. The treatments were implemented three times per week for about 30 minutes each for 10 weeks. During that time, classrooms were observed by research staff every 2 weeks and fidelity of treatment data were collected.
8. In addition to observing the treatments, all classrooms, including control classrooms, were observed during normal reading instruction. Collected data were used to compare the quality of instruction across groups when teacher-directed instruction was in progress to determine whether effects might be attributed to superior teaching in a particular group.
9. At the end of 10 weeks, students were posttested using alternate, counterbalanced forms of the reading test.
10. Pre- and posttests were scored and observational data were

coded. All data were entered into a computerized database where they were analyzed statistically.

11. A comprehensive review of the literature on peer-mediated reading instruction with students with disabilities was completed using the methodology of best-evidence synthesis (Slavin, 1986) (see Appendix C).

Methodology

The Sample

The population. Subjects were fourth- through sixth-grade students identified as learning disabled who were receiving reading instruction in special education resource rooms. For inclusion in the study, students must have had an identified learning disability in reading. A disability in reading was considered a sever discrepancy of 1 or more standard deviations between assessed intellectual ability and academic achievement in reading. In order to be included in the sample, subjects must have received reading instruction in a special education resource setting and must have had IEP objectives in reading. Students who were placed in special education resource reading because of behavioral problems or because of mental retardation were not included in the sample.

Sampling procedures. Upper elementary and middle school special education resource room teachers were recruited for participation. The requirements for inclusion in the study included: (a) the teacher provided reading instruction to her students, and (b) the teacher's students were receiving resource services because they had been identified as learning disabled.

Research Design

This project utilized a two factor, multiple treatment, pre-posttest control group design in which subjects' treatment assignment was nested under their teachers' assignment. The two factors were type of peer-mediated instruction (i.e., repeated reading vs. sustained reading) and level of text difficulty (i.e., instructional vs. independent). The design was experimental because special education resource teachers who volunteered were assigned randomly to control or experimental groups and experimental teachers were assigned randomly to the repeated reading or the sustained reading group.

Students were nested under teachers because students' treatment assignment was determined by the assignment of their teachers. However, because treatments were carried out independently of the teacher, the assumption of independence of error was met; thus, students were the unit of analysis (Hopkins, 1982).

During pretesting, experimental subjects were administered a placement test to determine their instructional and independent reading levels for the reading series utilized for the project. Students' assignment to instructional or independent level text was determined through random assignment, irrespective of classroom. However, students who had instructional levels at the primer level were assigned only to instructional level text, since independent level reading material was not available. Control students also were assigned randomly to instructional or independent comparison groups so that the design was balanced, with equal number of subjects in each cell. However, text level was not actually manipulated for control subjects.

To control for a possible teacher effect, each comparison group had four teachers. In all three conditions, the subjects were of similar ages and evidenced similar types of disabilities.

Classwide Peer Tutoring Conditions

Peer-mediated instruction was conducted in the students' special education resource reading classes three times each week for 10 weeks. Each tutoring session required approximately 30 minutes. The general procedures were similar to Classwide Peer Tutoring (CWPT) developed at Juniper Garden's Children Project at the University of Kansas (Greenwood et al., 1988). These procedures include: a team arrangement, pairs of near equal ability, reciprocity of tutoring roles, and a point system for reinforcing reading and tutoring behaviors. All students in a teacher's class participated in peer-mediated instruction at the same time, which occurred during time normally scheduled for reading instruction. Thus, peer-mediated reading replaced part of scheduled reading time in experimental classrooms.

Students were paired by the researcher so that each member of a pair was reading text at either in instructional or independent level as assigned and trained to carry out the treatment independently. Initial training required three 50 minute sessions for each treatment. Materials needed to conduct the treatments were basically the same for both treatments and were provided by the researchers. Materials included the students assigned reading text, and student folders. Both treatments used the same reading series. Reading texts were provided by the researchers after students reading levels were assessed and level of text difficulty assigned.

The teacher's role during peer-mediated reading instruction was to monitor students' performance and orchestrate the session. Students were paired with students who functioned near the same reading level. Pairs read from the same text. However, within a pair, the text may have represented an instructional level for one student and independent level for the other student. It was not necessary that students who were part of the sample be paired only with other students who were part of the sample since all students in the class participated.

Following the CWPT model, peers worked together in reciprocal roles. Each student in each pair served as tutee for half of the time and as tutor for half of the time. Additionally, pairs were assigned to teams, for which they earned points. Points were awarded for reading sentences without error and for behaving appropriately during tutoring. Points were awarded by the tutor as they were earned and by the teacher for additional reinforcement. At the end of the instructional week, points were reported, total points for each team were determined, and the winning team was announced (Greenwood et al., 1988). Thus, the motivational procedures were both competitive and cooperative.

The overall instructional time did not vary among conditions. The total instructional time allotted for reading in control and experimental classrooms was approximately the same. Additionally, the actual time spent in oral reading was the same for the two experimental conditions: In both experimental conditions, subjects read orally for a total of 9 minutes and followed along as a peer read for another 9 minutes. Thus, outcome differences among treatments were not a function of instructional time.

Sustained reading. In the sustained reading condition, the reader read orally from assigned basal reading text continuously for 9 minutes, while the tutor monitored errors, corrected errors when they occurred, and awarded points for reading accurately. After 9 minutes, the tutor and the reader switched roles and repeated the process (Greenwood et al., 1988). Reading material was read one time only, with readers reading different selections of text.

Repeated reading. The procedures for the repeated reading condition were derived from the O'Shea, Sindelar, and O'Shea (1987) procedures in which subjects read one passage three times.

These procedures were somewhat more complex than the sustained procedures; however, with training and monitoring, the subjects carried out the procedures satisfactorily.

During repeated reading, subjects read three different passages three times each for 1 minute at each reading, for a total reading time of 9 minutes. At the end of each 1 minute reading, errors were corrected and points awarded. Pages were covered with an acetate sheet that was fastened with a paper clip. Thus, tutors were able to record errors as they occurred with the use of a grease pencil. After errors were corrected, the acetate sheet was erased and the reader read the same text again. After the third reading of a selection, the acetate was moved to the next page for a new selection, and the process was repeated. After the first reader read three passages three times each, the tutor and the reader switched roles and repeated the entire process.

Control Condition

Subjects received reading instruction from their teachers in normal fashion.

Measures

Achievement. Reading achievement was measured using the Comprehensive Reading Assessment Battery (CRAB) (Fuchs, Fuchs, & Hamlett, 1989) (see Appendix D). Reading achievement was assessed individually both before and after implementation of peer-mediated reading instruction. The scores derived from this

test were (a) the average number of words correctly read orally in 3 minutes,
(b) the average number of correct responses to 10 comprehension questions asked after a 3 minutes timed reading of a story, and (c) the number of maze choices answered correctly on a 2-minute maze activity.

The CRAB employs four 400-word traditional folktales, used in previous studies of reading comprehension (e.g., Brown & Smiley, 1977; Jenkins, Heliotis, Haynes, & Beck, 1986). The stories were rewritten by Jenkins et al. (1986) to approximate a second- to third-grade readability level (Fry, 1968), while preserving the gist of the stories. These folktales serve as stimuli for all CRAB tasks. On one passage, subjects are required first to read orally for 3 minutes and then to answer 10 comprehension questions. On a second passage, students (a) have 2 minutes to complete a maze, (b) read orally for 3 minutes, and (c) answer 10 comprehension questions. The comprehension questions, developed by Jenkins et al. (1986), require short answers reflecting recall of information contained in idea units of high thematic importance. The maze activity was prepared by leaving the first sentence intact; thereafter, every seventh word was replaced with a 3-item multiple choice, where only one item provides a semantically correct replacement. Across pre- and posttestings each student read from all four passages. Tasks associated with passages and orders of administration of the tests were counterbalanced across treatment groups.

To generate the words read correctly score, examiners mark insertions, omissions, substitutions, hesitations of longer than 5 seconds, and mispronunciations not caused by speech related problems as the student reads. Omissions and additions of the endings (ed, s, and ing) are scored as errors; self-corrections are not. Student performance is scored as the average number of correct words read, averaged across the two 3-minute samples. Test-retest reliability ranges from .93 to .96 (Fuchs, Deno, & Marston, 1983). Concurrent validity with the Stanford Achievement Test - Reading Comprehension Subtest was .91 (Fuchs, Fuchs, & Maxwell, 1988).

For the number of correct comprehension questions, students respond orally to ten comprehension questions after reading a story for 3 minutes. Questioning is terminated after 5 consecutive incorrect answers. Students performance is scored as the average number of questions answered correctly, averaged across the two 10-question samples. Concurrent validity with the Stanford Achievement Test - Reading Comprehension subtest was .82 (Fuchs et al., 1988).

For the number of correct maze responses, scorers count the number of correct and incorrect responses. Agreement was .99 for this index, as calculated on a sample of 20 protocols using the Coulter formula. The correlations for the number of correct maze with the Stanford Achievement Test - Reading Comprehension test was .82.

Fidelity of Treatment

After training, observations of each classroom and each subject were conducted every 2 weeks for a total of five times in each of the treatment classrooms after training. An observation checklist of all the behaviors that should occur during each peer-mediated instruction condition was adapted from the Teacher's Implementation Report for Reading Tutoring (Greenwood et al., 1988) for each treatment. This observation system was used during each observation. These observations served to determine whether treatments were conducted properly.

All observations were conducted by the second author and two graduate level students. All items were scored as being either present or absent. Reliability data on the observation system were collected on 20% of the observations for both treatment instruments. Interobserver agreement for both instruments was 98%. Agreement was calculated as agreements/(agreements + disagreements).

Observations of Teacher-Directed Reading Instruction

Teachers in all three conditions were observed twice during the 10 weeks of the treatment during regular teacher-directed reading instruction. The purpose of these observations was to document how time was used during reading instruction across conditions. We hoped that teachers' use of instructional time would not differ significantly across conditions, so that any differences in reading achievement could be attributed more readily to the treatments rather than to the quality of teacher-directed instruction.

Two observational tools were employed: Reading Instructional Time Use (RITU) and Teacher Effectiveness Rating Scale (TERS) (see Appendix D). The second author and one research assistant completed interobserver reliability checks on 37% of the normal reading instruction observations.

The RITU (Mathes & Fuchs, 1991b) is a frequency count recording instrument developed for this study. It focuses on the behavior of one target student during reading instruction. Categories of behavior are (a) attending to teacher-directed instruction, (b) reading orally, (c) reading silently, (d) completing independent seatwork, and (e) noninstructional waiting or off-task behavior. The observer uses a stopwatch with digital display to record the time that the target student engages in each category of behavior. When the student changes behavior, the observer looks at the time on the watch, clears and restarts the watch, then writes the time down for the appropriate behavioral category. Interobserver agreement for the total RITU was .91. The agreement for each category of behavior was as follows: attending to teacher directed instruction, .93; oral reading, .89; silent reading, .82; independent seatwork, .98; and noninstructional waiting or off-task behavior, .86.

The TERS (Simmons, Fuchs, & Fuchs, 1989) focuses on teacher behaviors. It is a global measure of generic functions modeled after the Teacher Effectiveness Evaluation Form (Gersten, Meyer, & Zoref, 1979). The TERS was filled out immediately following each observation. The TERS documents allocation of instructional time, review activities, statement of objects, skills presentation, guided practice, academic feedback, students' opportunities to respond, and behavior management. A teacher's score is determined as the portion of points earned out of the total possible. Overall interobserver reliability on this instrument was .92.

Teacher and Student Satisfaction

Following the 10 weeks of the intervention implementation, experimental teachers and students answered questionnaires exploring their satisfaction with the treatments. The questionnaire probed their opinions about the appropriateness and benefits of the treatment they were assigned to and requested teachers to identify aspects of the treatments to improve. Items followed a 5-point Likert-type format.

Results

Demographics

Performing chi-square analysis on categorical data and oneway analysis of variance on continuous data, no reliable differences were found among groups on grade, IQ, and socioeconomic status. However, using one-way analysis of variance (ANOVA), a reliable difference was revealed on the number of years that students had been in special education classes $F(2,64) = 5.08$, $p < .05$. Post hoc analysis using the Student-Newman-Keuls procedure indicated that students in the sustained reading group had, on average, been in special education for fewer years than either the repeated reading group or the control group. Thus, it is possible that students in the sustained reading group were less severely disabled since, as a group, they were not identified as early as students in the other groups. Table 1 shows the demographic data for each group.

Table 1: Mean student demographics by treatment group.

Measure	Treatment Group			F or X^2	p
	Repeated Reading n=22	Sustained Reading n=23	Control n=22		
Grade	4.6 (.73)	5.0 (.70)	5.0 (.82)	$X^2 =$ 5.17	.27
IQ	89 (13.12)	92 (13.67)	91 (15.47)	$F =$ .31	.73
Years in SpEd	3.34 (1.33)	2.52 (1.30)	3.77 1.37	$F =$ 5.08	.01

Achievement

Pretest. Data were analyzed through SPSS/PC+ (Norusis, 1988) statistical procedures using Wilks's lambda criterion. Since multiple dependent measures were analyzed, multivariate analysis of variance (MANOVA) was performed initially. MANOVA on pretest measures indicated that the groups initially were not equivalent. Thus, multivariate analysis of covariance (MANCOVA) was performed to determine differences in posttest performance. Table 1 shows initial pretest scores and standard deviations for each group, as well as the F value and p-values for differences among groups. Table 2 presents initial pretest scores, standard deviations, and the inferential statistics for the main effect of text difficulty and the 2-way interaction of treatment and text difficulty.

Table 2: Group mean pretest scores (standard deviations) and inferential statistical values for differences among groups for each CRAB subtest.

CRAB Subtest Measure	Treatment Group			F	P
	Repeated Reading n=22	Sustained Reading n=23	Control n=22		
Words Correct	139.59 (88.26)	231.76 (113.92)	207.07 (112.57)	4.55	.01
Comprehension	2.64 (1.90)	4.48 (2.71)	3.30 (2.02)	3.90	.03
Mazes Correct	5.95 (3.72)	11.78 (5.90)	7.95 (4.87)	8.15	.00

Table 3: Group mean pretest scores (standard deviations) and inferential statistical values for differences among groups X text level of difficulty for each CRAB subtest.

CRAB Subtest Measure	Treatment Group						F	p
	Repeated Reading		Sustained Reading		Control			
	Inst. n=13	Ind. n=10	Inst. n=10	Ind. n=9	Inst. n=13	Ind. n=9		
Words Correct	112.5 (59.5)	172.1 (108.2)	220.3 (121.8)	246.7 (107.2)	209.6 (127.8)	203.38 (93.6)	Text 1.0	.3
							By Trmt .51	.6
Compre-hension	2.4 (1.7)	2.9 (2.2)	4.3 (2.7)	4.7 (2.9)	2.7 (1.9)	4.1 (2.0)	Text 1.7	.2
							By Trmt .32	.7
Mazes Correct	13.9 (8.1)	16.2 (10.6)	22.0 (14.0)	27.9 (13.1)	18.4 (10.4)	22.4 (13.7)	Text .55	.5
							By Trmt .27	.8

Posttest Measures

Due to initial differences among groups at pretest, a two-way (treatment group: repeated reading vs. sustained reading vs. control; text difficulty: instructional vs. independent) multivariate analysis of covariance (MANCOVA) was performed on posttest scores, using pretest scores as covariates. This analysis indicated a main effect for treatment. However, there was no main effect for text difficulty and no interaction between treatment and text difficulty. Thus, univariate analysis were performed to investigate the treatment group main effect. Univariate analyses were carried out using analysis of covariance (ANCOVA) with each posttest measure's corresponding pretest used as the covariate. Data were analyzed using a one-tailed test of the null hypothesis since prior studies on classwide peer-mediated reading indicate the directionality of anticipated differences (Simmons et al., 1991).

A significant difference was found among groups on the fluency measure (i.e., words read correctly) $F(2,63) = 2.79$, $p < .05$. Performanc on questions correct and mazes correct were not significant $F(2,63) = 1.50$ and 1.75, ns. Post hoc analysis of the words read correctly measure using the Student-Newman-Keuls test indicated that the sustained reading group significantly outperformed the control group. However, the sustained reading group and the repeated reading group were not significantly different. Likewise, there were no reliable differences between the repeated reading and the control groups. Table 4 shows the adjusted posttest scores and standard deviations for each CRAB measure.

Table 4: Mean adjusted posttest scores and inferential statistical values for differences among groups for each subtest of the CRAB.

CRAB Subtest	Treatment Group			*F*	*p*
	Repeated Reading *n*=22	Sustained Reading *n*=23	Control *n*=22		
Words Correct	218.95	227.46	207.97	2.79	.03
Comprehension	4.13	4.77	4.00	1.52	.30
Maze Correct	9.31	11.42	10.61	1.75	.18

Effect sizes for each posttest measure were calculated based on analysis of covariance adjusted scores. For both treatments, effect sizes were negligible. Table 5 presents the effect size for each treatment group compared to the control group and the sustained reading group compared to the repeated group for each CRAB measure.

Table 5: Effect sizes for each CRAB measure and each treatment group.

CRAB Subtest Measure	Repeated Reading vs. Control	Sustained Reading vs. Control	Sustained Reading vs. Repeated Reading
Words Correct	.10	.17	.07
Comprehension	.01	.04	.04
Maze	-.24	.15	.38

Fidelity of Treatment

Observations of the implementation of classwide peer-mediated reading instruction indicated that students and teachers implemented both versions with high levels of fidelity. The average implementation score for the repeated reading condition was 92%; for the sustained reading condition, 94%. While the two treatments did not differ in average implementation, the repeated reading condition implementation scores ranged more (65% to 99%) than did the sustained reading implementation scores (82% to 100%).

Observational Data of Teacher-Directed Reading Instruction

Data from observations of teacher-directed reading instruction were analyzed using oneway ANOVAs using each category of behavior on the RITU observation instrument and for total score of TERS. Results of RITU indicated that the three groups did not differ significantly on the time spent on total reading instruction, or the percentage of (a) attending to teacher-directed instruction, (b) oral reading practice, (c) silent reading practice, or (d) noninstructional waiting or off-task behavior. However, a significant difference was indicated for the percentage of time students spent engaged in independent seatwork, F (2,9) = 7.43, $p < .05$. Post hoc analysis using the Student-Newman-Keuls procedure indicated that the sustained reading group spent more time completing independent seatwork that either the repeated reading group or the control group. Analysis of the TERS also indicated a difference in the overall quality of teachers' instruction $F(2,9) = 5.06$, $p < .05$. Post hoc analysis indicated that the instruction of the repeated reading group was rated higher than that of either the sustained reading group or the control group. Table 6 displays the results for these observational data.

Table 6: Mean percentage of total instructional time scores on the RITU and mean rating scores on the TERS, standard deviations and statistical values for differences between groups for observational data collected during normal reading instruction.

Measure	Treatment Group			F	p
	Repeated Reading n=4	Sustained Reading n=4	Control n=4		
Teacher-Directed Instruction	51% (14)	24% (18)	27% (13)	3.77	.06
Oral Reading	6% (4)	1% (1)	5% (3)	2.69	.12
Silent Reading	16% (7)	14% (11)	17% (16)	.04	.96
Independent Seatwork	5% (10)	38% (13)	12% (16)	7.43	.01
Waiting or off-task	22% (15)	22% (7)	38% (18)	1.79	.22
Total Minutes of Reading	35.03 (8.15)	42.37 (4.31)	37.37 (7.34)	.91	.44
TERS Total Score	75.88% (19.84)	41.25% (20.02)	49.00% (16.90)	5.06	.03

Teacher and Student Satisfaction

Results of the questionnaires completed by teachers and students at the end of the 10-week treatment indicated high levels of satisfaction with both treatments. No differences were found between the two treatments. On a 5-point scale, with larger numbers representing more favorable responses, teachers reported a mean score of 4.3 for appropriateness of the treatments. Teachers reported that they felt that the treatments had contributed positively to their students' reading progress ($\underline{M} = 4.0$) as well as to their students' self-confidence about reading ($\underline{M} = 4.9$). Furthermore, teachers reported that they were likely to use the treatment again ($\underline{M} = 4.7$) and that they felt the benefits of participating in the project out weighed any inconvenience encountered ($\underline{M} = 4.3$).

While there were no statistical differences on any questions asked to the teachers, students did express statistically different opinions on the degree to which they liked their respective treatments. The repeated reading group reported a greater satisfaction with the treatment (sustained reading $\underline{M} = 3.5$, repeated reading $\underline{M} = 4.4$), $\underline{F}(1,6) = 2.30$, $\underline{p} < .05$. However, no other differences were found between the two groups. Both groups of students reported that they felt tutoring helped their reading ($\underline{M} = 4.7$), that they liked being on a team ($\underline{M} = 4.4$), earning points ($\underline{M} = 4.9$) and that they liked being on the winning team ($\underline{M} = 4.7$).

Discussion

The results of this study suggest that sustained reading within a classwide peer-mediated reading procedure is superior to typical reading instruction for developing fluency. However, neither method was superior to typical instruction in increasing comprehension. Thus, the hypothesis that fluency development would also increase comprehension development was not supported by this study. Additionally, the use of repeated reading as a technique for increasing reading ability was not supported, at least when used in the context of a classwide peer-mediated activity with learning disabled students serving as tutors. While statistical significance was achieved for the fluency measure (i.e., words correct) for the sustained reading group, the effect size achieved for this measure was relatively weak.

There also appeared to be no effect for the level of text difficulty. However, given the relatively weak effects achieved by the treatments, it is unclear if the level of text difficulty truly had no effect or if the treatments were not strong enough to demonstrate the effect of text difficulty.

The results of this study indicate that peer-mediated reading instruction may not always yield the strong effects that reviews of the literature (i.e., Mathes & Fuchs, 1991a) and studies of similar treatments (i.e., Simmons et al., 1991) would lead one to expect. Additionally, the results seem to lead to the conclusion that increasing reading achievement is a complex phenomenon that may require more than increasing opportunities to practice. While the results suggest that increasing opportunity to practice reading did have some effect, the effects were not dramatic and apparently were mediated by the type of practice.

Thus, the rationale that peer-mediated reading should lead to academic increases may be simplistic.

It must be recognized that previous studies of classwide peer-mediated reading instruction have been conducted in mainstream classrooms (Simmons et al., 1991) and often have not included students with disabilities (Elliott, 1991; Greenwood et al., 1989). Thus, it is likely that the severity of reading disability found in students participating in previous studies was less. The expected gain for a less severe population would, of course, be greater.

Interestingly, the present results are in keeping with results found by Scruggs and Osguthorpe (1986) in a study examining a reciprocal role decoding treatment conducted with same age students identified as learning disabled in resource rooms. Like the present study, Scruggs and Osguthorpe found statistical significance on the measure most closely related to the treatment (i.e., decoding) but weak effect sizes. Additionally, like the present study, the treatment utilized by Scruggs and Osguthorpe was similar to a treatment that resulted in strong effects when applied in mainstream settings (Top & Osguthorpe, 1985; Top & Osguthorpe, 1987).

Given that the sustained reading treatment obtained better results than the repeated reading treatment, it is recommended that sustained reading be applied in future versions of peer-mediated reading instruction. However, it seems likely that this one component alone may not have the power to increase reading achievement dramatically with more severely disabled readers. It seems likely that resource teachers should also make use of other practices and curriculum which have been demonstrated to be effective for this population. Perhaps in tandem with other effective practices as such as Direct Instruction (Carnine, Silbert & Kameenui, 1990), Curriculum-Based Measurement (Fuchs & Deno, in press), and other components of peer-mediated instruction (Simmons, et al., 1991), the increase in opportunities to practice reading may result in more dramatic effects.

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Appendix A

Sustained Reading Teacher's Procedural Manual

Peer-Mediated Resource Reading

Students Helping Students

Principal Investigator
Lynn S. Fuchs, Ph.D.

Project Director
Patricia G. Mathes, M.Ed.

This manual was developed under a grant from the U.S. Department of Education, Office of Special Education and Rehabilitative Services. The contents do not however refelect the policy of the Department of Education and no endorsement should be inferred.

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PEER-MEDIATED RESOURCE READING

Preface

This manual was developed for Peer-Mediated Resource Reading, a research and demonstration project sponsored by the U.S. Department of Education. The purpose of this project is to work cooperatively with resource room teachers to develop, implement, and evaluate the effectiveness of methods designed to enhance the quality of instructional services provided mildly handicapped students. This research focuses on the class wide application of peer- mediated reading instruction and how it effects students' reading fluency and comprehension. The procedures described should complement your current reading instruction program by structuring additional opportunities for your students to read and receive feedback and reinforcement.

This manual explains the procedures for introducing, implementing, and monitoring the project's version of peer-mediated reading instruction. The basic procedures rely heavily on tutoring procedures developed by Charlie Greenwood, Joe Delquadri, and Judith Carta at the University of Kansas (Classwide Peer Tutoring). The specific reading procedures rely heavily on research conducted in mainstream classrooms at George Peabody College by Deborah Simmons, Lynn Fuchs, Doug Fuchs, Janie Pate, and Patricia Mathes (Peabody Classwide Peer Coaching). We appreciate the foundation developed by these individuals and acknowledge the integral part these methods play in the overall peer-mediated reading program described in this manual.

We wish to recognize Dr. Deborah Simmons at Peabody College for writing an earlier version of this manual for another project and we wish to thank her for allowing us to use her work as a basis for this manual.

The purpose of this project is to expand past research by applying peer-mediated reading procedures which have been shown to be effective in mainstream classrooms to resource rooms. In this project, your special education students will serve as both readers and tutors. Previous research has demonstrated that when mildly handicapped students are given the role of serving as tutor, they achieve better than mildly handicapped students who serve only as readers.

Chapter 1

Introduction

CHAPTER ONE: INTRODUCTION

We believe teachers can make a difference in student achievement whether that student is handicapped or normally achieving. With your assistance, we will examine how substantial that impact can be on learning disabled students. We appreciate your participation in the project and look forward to your assistance and feedback.

To test the potential of peer-mediated reading instruction in resource rooms, **it is important that you follow the prescribed methods as closely as possible**. If practiced as prescribed, these methods should make a positive difference in your students' reading achievement.

Throughout the course of the project, the roles of the Peabody-Vanderbilt staff are to (a) assist you in providing optimal training to your students, (b) monitor implementation of the procedures, and (c) evaluate the effectiveness of the intervention. The primary objective of our mission is to train students to conduct and participate in tutoring sessions that result in improved reading achievement and social skills. This is a joint effort. Thus, it is important that you **communicate your concerns, ideas, and suggestions** to us so that we can respond accordingly.

Thank you for your commitment to our project. We are enthusiastic and optimistic that our coordinated energy and efforts will benefit all involved. Our optimism is grounded in the demonstration that students achieve in classrooms when teachers accept responsibility for **all** students and implement instructional methods that accommodate the range of skills and needs in the classroom.

MANUAL OBJECTIVES

After reading this manual, you will be able to:

1. Define and state the rationale for peer-mediated reading instruction and Repeated Reading.
2. Pair students for peer-mediated reading and assign pairs to teams.
3. Teach students to serve as tutors.
4. Teach students to serve as readers.
5. Collect student and team points.
6. Implement the steps of the project's peer-mediated reading program.

INTRODUCTION TO PEER-MEDIATED INSTRUCTION

Definition and Rationale

You are most likely familiar with the concept of peer tutoring. Peer-mediated instruction is a synonym for peer tutoring and is an activity where students within the classroom work together to enhance their academic performance.

Peer-mediated reading instruction is an innovative and resourceful means of addressing the diverse needs of students in your classroom. It broadens your options for providing reading practice, feedback, and instruction.

Research conducted during the past two years at Peabody College - Vanderbilt indicates that mildly handicapped students are capable of handling the responsibilities required in peer-mediated reading. Additionally, the research indicates that mildly handicapped students who participate make **significantly greater reading gains** than those who do not!

In this project's version of peer-mediated instruction, all students in the class will serve both as tutors and readers. Experimental studies indicate that when consistently implemented, this type of peer-mediated instruction produces a classroom climate that increases the amount of learning time, material covered, and skills mastered, decreasing off-task and disruptive behavior.

Peer-mediated instruction differs from most other instructional methods in several important ways:

* It uses peers to supervise responding and practice.

* It uses a game format, including points and competing teams, to motivate students and maintain their interest.

Why Is Peer-Mediated Reading Important?

One of the most persistent problems that classroom teachers face is how to ensure that all students engage in learning tasks and receive sufficient practice to master these tasks. We have found that it is simply not enough to expose students to academic materials or to put students into stimulating environments. Students must actively engage in the learning task in order to perform well. Students must interact directly with the learning task, and not just watch or listen to it. **Thus, this project's peer-mediated reading program is designed to double or triple the amount of reading practice that all students are currently receiving. Compared to other teaching methods, peer-mediated reading increases all students' on-task behavior and their practice of academic tasks. This is true even for students who are the most delayed or difficult to motivate.** As a result, peer-mediated reading increases reading fluency and comprehension and builds student self-confidence and self-esteem.

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GOALS OF PEER-MEDIATED RESOURCE READING

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Goals for the Teacher

Objective 1: Teachers will implement peer-mediated reading sessions in their resource classroom.

Objective 2: Teachers will reinforce student and team achievement.

****

The primary goal of this program is to facilitate student mastery of reading skills. To accomplish this goal, the teacher must implement the procedures described in this manual in a consistent and orderly manner. You should be aware that **deviations from the procedures described in this manual dramatically decrease the effectiveness of peer-mediated reading in your classroom.** Thus, quality implementation is essential to reaping the benefits of the program. To achieve these results, the teacher must have two short-term goals:

(1) **Carefully READ this manual.**

(2) **Implement the program as described without modification.**

****

Goals for the Students

Objective: 1) Students will increase their reading speed and make less word recognition errors.

2) Students will increase their comprehension for what they read

3) Students will work cooperatively with other students in their reading class.

****

The goals for the students in this program include improvement in reading fluency, comprehension, and peer acceptance. To achieve these goals, the students must learn two roles: the tutor role and the reader role.

The tutor role entails directing and supervising the tutoring session. This requires learning how to: (1) present tasks and directions to the reader, (2) monitor reading and correct word recognition errors, (3) award points based on the reader's performance.

The reader role involves actively practicing the material presented by the tutor in order to earn points for the reader's team. The reader must learn how to read quickly and accurately.

OVERVIEW OF THE PEER-MEDIATED READING PROGRAM

Peer-Mediated Resource Reading will utilize Repeated Readings, a reading procedure which has substantial evidence to support it as a teacher-directed activity. A brief description of Repeated Reading follows. A more elaborate description appears in latter sections of this manual.

The procedures described in this manual will be implemented in your classroom for **10 weeks**.

REPEATED READING

What It Is: Repeated Reading has been shown to improve reading fluency and comprehension through the rereading of short passages. During Repeated Reading, the reader reads the same passage 3 consecutive times. One-minute is allowed for each reading. In this project one student will read 3 different passages 3 times each. After one student has read 3 different passages 3 times each, the pair will switch roles, and the second student will read 3 different passages 3 time each.

How: During Repeated Reading, the teacher announces to "get ready for Repeated Reading; readers begin reading." All readers read as quickly and correctly as they can simultaneously. The teacher times for one minute. When the minute is over, the teacher announces "stop reading correct errors and count the number of points the reader earned." Students will have 30 seconds between readings to quickly correct errors and count and mark points. Students will earn points for each line of text they read without making an error. The process is repeated three times for each passage. In all, students will do 9, 1 minute readings.

When: Peer-mediated reading instruction will occur 3 **days per week**.

How Long: Repeated Readings should take approximately 5 minutes for each set of 3 readings on 1 passage. Thus, the whole process will take about 15 minutes for each reader to complete 3 different passages and 30 minutes for both students in a pair to read.

Materials:

Materials for peer-mediated reading instruction will include:

1. The student's reading book
2. Tutoring Folder
3. Plastic Sheet Protectors
4. Felt Sheet Cleaner
5. China Marker
6. Help Card
7. Weekly Score Cards

With the exception of the reading book, all of these materials will be provided for all of your students by the project. Reading books will be provided for target students only. Other students will use their normal reading book.

Chapter 2

Preparing for Peer-Mediated Instruction

CHAPTER II:
PREPARING FOR PEER-MEDIATED READING INSTRUCTION

In this chapter, we will discuss the preparations necessary for implementing peer-mediated reading in your resource classroom. If you are reading this manual for the first time, our advice is to read all of the material to develop a complete understanding of the program.

Advanced planning and preparation of materials play a big part in implementing the program. The purpose of this chapter is to outline the preliminary steps you need to complete before beginning the program.

Preliminary Activities

1. Scheduling time for peer-mediated reading (Weekly Tutoring Schedule)
2. Designating pairs and teams (Teams Assignment Chart)
5. Becoming familiar with point awarding and reporting procedures
6. Preparing and organizing materials.

Step I: Scheduling Time for Peer Tutoring

The first step is to determine when you will fit the peer-mediated reading sessions into your weekly schedule. We ask that you implement peer-mediated reading three times per week. To determine your schedule, you need to refer to your weekly lesson plan and your district's suggestions about time usage for each academic subject. A sample weekly schedule follows.

Scheduling peer-mediated reading is a major instructional decision. Peer-mediated reading should be used as a replacement for one or more elements of an existing program, (e.g., assigned worksheets or independent activities; not teacher-directed instruction). The goal is to remediate students' fluency and comprehension deficits by increasing both the time available and opportunities for direct practice. In this program, we want to replace independent seatwork with direct practice in reading, while keeping your teacher-directed time intact.

!!!

Research indicates that the more time students spend working independently or completing worksheets, the less achievement they make.

!!!

****

In 1989-1990, we found that replacing part of reading instruction time with peer-mediated reading instruction resulted in significant achievement gains!

****

Recommendations for Scheduling

1. Schedule a time that will allow tutoring to occur 3 times per week for 35 minute sessions.
2. Conduct tutoring sessions at the same time each day.
3. Reserve part of reading instruction for teacher-directed activity to cover specific reading objectives not addressed by peer-mediated reading. Schedule the remaining time for peer-mediated reading. Reduce the amount of independent activities you ask your students to complete and use that time for peer-mediated reading.

* A form for scheduling weekly peer-mediated reading sessions follows.

****

To Do: Complete the Weekly Tutoring Schedule

****

Check off as completed:

1. ____ I have scheduled Peer-Mediated Reading 3 times a week.
2. ____ I have scheduled 35 minutes for each session.

Weekly Tutoring Schedule

Block in tutoring time and days.

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
7:30					
7:40					
7:50					
8:00					
8:10					
8:20					
8:30					
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1:10					
1:20					
1:30					
1:40					
1:40					
2:00					
2:10					
2:20					
2:30					

STEP 2: Selecting Peer-Mediated Reading Pairs and Weekly Teams

Determining Tutor Pairs

Students will be paired with the same tutoring partner for the entire 10 weeks; therefore, it is important that they are paired appropriately. Tutoring pairs will be determined by the research staff. Your students will be given a short reading test which will let us see which students are similar in their reading skills. Students of near equal abilities will be paired together. Sometimes it may be necessary to pair students who are reading in adjacent reading levels. However, students who are reading the same materials (or in the same reading group) will provide the most appropriate practice.

After we have paired your students for peer-mediated reading, we will ask you to review the pairings to be sure that we have paired students with peers with which they will work cooperatively. We want students paired with socially compatible partners.

Handling Uneven Numbers of Students

Sometimes classrooms will have an uneven number of students. This may change from day-to-day depending on students' attendance patterns. If this happens, there are three options you might consider:

1. If more than one student is absent, the two students without partners may be paired.
2. Another option is to form a triad. Here three students work together. Roles are changed so that all students have an opportunity to practice their assignments. In this case, each student would read 2 passages three times each.
3. Please to not place target students in a triad, unless you absolutely have to!

Assigning Pairs to Teams

Once students are paired, you need to assign pairs to teams. **Team assignments will change each week**. Each week you will move pairs around so that students get to be on different teams throughout the 10 week period. Changing teams each week ensures that no team is consistently stronger.

The purpose of teams is not only to motivate students, but also to instill a sense of contribution to the team and cooperation with peers. Each student's daily score contributes to the overall team score, which in turn is used to determine the weekly winner. Thus, students are accountable for their individual score as well as their team score.

It is important to create teams of near equal abilities. This will require distributing an equal number of high achieving, average achieving, and low achieving pairs to each team. Use the **Team Assignment Chart** which follows to record student team assignments and save it as a permanent record. Team assignments can be made ahead of time for several weeks and recorded on the Team Assignment Chart. This chart will also be used to record weekly points earned.

If you have an odd number of pairs (6 Red pairs and 7 Blue pairs), the extra pair's score will be counted for both teams.

****

To Do:
Assign Students to Teams
Record this information on the Team Assignment Chart

****

Team Assignment Chart

Week: ____________________

Team:

Points	1st Reader	1st Tutor	Points
	Team Total		

Team:

Points	1st Reader	1st Tutor	Points
	Team Total		

STEP 3: Awarding and Recording Points

!!

THE POWER OF THE POINT!

Points have proven to be a very effective motivator for mildly handicapped students like yours!

!!

Peer-mediated reading uses a game format to maintain student interest and motivation. In the "tutoring game", students earn points that contribute to the team score.

The reader earns points according to his/her performance during peer-mediated reading activities. Readers earn points for the number of sentences they read correctly. Tutors earn bonus point for being "good tutors."

****

Our past experience indicates that teacher who make frequent use of bonus points have less problems during tutoring.

****

Readers can earn bonus points by:

- Reading sentences quickly and clearly.
- Working cooperatively with the tutor.
- Getting materials ready quickly and quietly.
- Other activities determined by the teacher.

Tutors earn bonus points by:

- Listening and following along as their partner reads.
- Correcting reader's mistakes quickly appropriately.
- Awarding the correct number of points.
- Other activities designated by the teacher.

Bonus Points are your quality control procedure. Bonus Points allow you to reinforce the correct tutoring skills. Post the Bonus Point Reminder in your room to prompt students about how they can obtain bonus points. You should **give bonus point freely**. However, be specific about why you are giving them. On the following page is a list of behaviors you should reward with bonus points. **Post this list in your classroom as a reminder to your students.**

☞ Bonus Points

Tutors can earn extra points for:

☞ have your tutoring material in the correct place.
☞ talk only about tutoring.
☞ keep your voice at a quiet level.
☞ listen to your partner read.
☞ help your partner with hard words.
☞ give the correct number of points to the player.
☞ keep track of points.
☞ praise your partner for doing a good job.
☞ give it your best!

☞ Bonus Points

Readers earn extra points for:

☞ have your tutoring material in the correct place.
☞ talk only about tutoring.
☞ keep your voice at a quiet level.
☞ read clearly and correctly.
☞ correct the words you miss.
☞ praise your partner for doing a good job.
☞ give it your best!

The Score Card

The Student Score Card is for individual students to record their daily points. As students earn point, they place a slash through the numbers. **Students will use 1 score card for an entire week**. At the end on each day, they will circle the last point that they earned. On the next day tutoring occurs, they will begin slashing points on the next number.

On the last day of peer-mediated reading for the week, students report their total points on their score card, which you record on the Team Assignment Chart. Next you total each teams' points and write the weekly point total for each team on the **Score Board** which follows.

Score Card

Name:____________________ Week____________________

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81	82	83	84
85	86	87	88	89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104	105	106	107	108
109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132
133	134	135	136	137	138	139	140	141	142	143	144
145	146	147	148	149	150	151	152	153	154	155	156
157	158	159	160	161	162	163	164	165	166	167	168
169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192
193	194	195	196	197	198	199	200	201	202	203	204
205	206	207	208	209	210	211	212	213	214	215	216
217	218	219	220	221	222	223	224	225	226	227	228
229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252
253	254	255	256	257	258	259	260	261	262	263	264
265	266	267	268	269	270	271	272	273	274	275	276
277	278	279	280	281	282	283	284	285	286	287	288
289	290	291	292	293	294	295	296	297	298	299	300

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Score Board

Team

score

Team

score

STEP 4: Getting Students To and From Their Partners

!!!
You will need to organize your classroom to
MINIMIZE
transition time.
!!!

For peer-mediated reading to happen, student pairs must sit next to each other. You have two options for arranging for partners to be seated together.

OPTION 1: Permanent Seating

Assign readers and tutors adjacent seats for the 10 weeks they are paired. This eliminates the need for physical movement.

OPTION 2: Move/Stay Procedure

- Designate one member of the pair to be the mover and one to be the stayer. Write this on the Team Assignment Sheet and tell students their role. Teach students to get their materials ready and to move quickly and quietly to their partner.
- Students will remain a mover or a stayer for the entire 10 week period.
- Make sure that you have students evenly distributed throughout you room. You need to avoid having all students move to one side or area of the room.

Moving Rules

1. Leave your chair when you move.
2. Move quickly and quietly
3. Take your tutoring materials.
4. Quietly move the chair or desk.

STEP 5: Preparing and Organizing Materials

To facilitate effective management and pacing of the tutoring session, all materials must be assembled and ready.

TEACHER MATERIALS

1. A **stopwatch** for the teacher to time the tutoring sessions and the point recording period.
2. A **calculator** for adding team points during the point reporting period.
3. Team Assignment Chart with designated movers and stayers
4. Bonus Point Reminder
5. Peer-Mediated Reading Script

STUDENT MATERIALS

1. Instructionally appropriate reading textbook (Target students' books will be provided)
2. Tutoring folder
   - 11 score cards
   - Plastic Sheet Protectors
   - Felt Sheet Cleaner
   - China Marker
   - Help Card
   - Paper Clip
3. Pencil

****

All materials will be provided for you
except for a calculator and student pencil

****

Organize students' reading books in advance and designate a procedure for distributing these materials quickly. You should be able to get the session going within **2 minutes**. The students may have their books already in their desks or the books may have to be passed out by student helpers. If the books are passed out, make them available in an organized fashion. Some teachers stack books by levels on a table so that helpers can get to the appropriate books quickly. Problems arise if there is not an efficient means for passing out and collecting books.

PREPARATION CHECK

1. Do you know how to assign students to pairs?
2. Do you know how to assign students to teams?
3. How often do students stay with the same partner?
4. How often do pairs stay on the same team?
5. Do you understand the move/stay procedure?
6. How do you determine reading assignments for peer-mediated reading instruction?
7. What is the purpose of student points?
8. How can readers earn points?
9. How can readers earn bonus points?
10. How can tutors earn bonus points?
11. Where do you record the bonus points?
12. Where do students record daily points?
13. How often do you record student points?
14. Which form is used to record weekly points?

!!

TO DO:
Make a Tutoring Bulletin Board
Post:
Team/Pairs Assignments
Score Board
Tutoring Rules
Bonus Point Reminders

!!

Chapter 3

Training Students to Tutor

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CHAPTER III:
TRAINING STUDENTS TO TUTOR

!!!

Training will be done by Peabody-Vanderbilt Staff.

YOU WILL BE AN INTEGRAL PART OF TRAINING.

Please plan to be activity involved.

!!!

This chapter details the procedures for conducting this project's tutoring program. Student training sessions will be conducted by the Peabody-Vanderbilt research staff. However, if at any time you feel your students need refreshing on any of the steps, use your copy of the training outline to reteach the skill. Before introducing the reading program, it is important that the following preliminary procedures are well-established:

!!!

Preliminary Checklist

1. ___ Time has been scheduled for peer-mediated reading.
2. ___ Students have been assigned in pairs.
3. ___ Pairs have been assigned to teams.
4. ___ Reading texts have been selected.
5. ___ Necessary materials have been prepared and organized.
6. ___ Teacher is familiar with procedure for awarding and recording points.

!!!

Training Materials

Once the previous steps are established, be sure you have the following materials and equipment **before** peer tutoring training begins:

1. Overhead Projector

4. Student Books

3. Peer-Mediated Reading Script

Getting Students Ready for Tutoring

In this section, we detail the procedures for training students to conduct peer-mediated reading instruction. These exercises are to be completed before you actually attempt to implement the program. Your students must be able to perform these exercises well for the program to be a success. During the training sessions, your students will (a) learn about the tutoring program, (b) observe correct implementation of procedures, and (c) practice the tutoring procedures. We have divided these exercises into three lessons which are estimated to take 50 minutes each.

LESSON 1:
GENERAL FEATURES OF PEER-MEDIATED READING INSTRUCTION

In Lesson 1 Students will learn:

1. What Peer-Mediated reading instruction is.
2. How to earn and record points.
3. The peer tutoring rules.
4. The basic roles of readers and tutors.
5. How to set up materials for peer tutoring.

****

You and your students will need:

Team Assignment Chart - Filled out for week 1!

Score Board - posted

Tutoring Rules - posted

Tutoring Folders
- **score cards**
- **plastic sheet protectors**
- **felt cleaners**
- **large paper clips**
- **China Marker**
- **Help card**

pencils

****

Tutoring Rules

1. Talk only to your partner and only about tutoring.
2. Keep your voice at a low level.
3. Try your best!

Lesson 1 Outline

Critical Features of Peer Tutoring

1. Everyone in the class participates at the same time.
2. A peer is a classmate.
3. Tutoring means helping your partner become a better reader.
4. Everyone will be both a tutor and a reader.
5. You will do one job first, then switch and do the other job.

Organizational Features

1. Pairs work together for the entire 10 weeks.
2. Each pair is part of a team. Team assignments change each week.
3. Reading Assignments will be posted on the chalkboard each day.

Earning Points

1. Peer tutoring is like a game.
2. Each student earns points for his/her team.
3. Students earn points for reading quickly and correctly and for tutoring well.
4. Students record their own points on their own score card.
5. Students use 1 score card each week.
6. Students circle the last point they earn each day.
7. Students report points to the teacher on the last day of tutoring for the week.
8. Students must be good sports.

Lesson 1 Outline

Critical Features of Peer Tutoring

1. Everyone in the class participates at the same time.
2. A peer is a classmate.
3. Tutoring means helping your partner become a better reader.
4. Everyone will be both a tutor and a reader.
5. You will do one job first, then switch and do the other job.

Organizational Features

1. Pairs work together for 5 weeks
2. Each pair is part of a team. Team assignments stay the same for 5 weeks.
3. Reading Assignments will be posted on the chalkboard each day.

Earning Points

1. Peer tutoring is like a game.
2. Each student earns points for his/her team.
3. Students earn points for reading quickly and correctly and for tutoring well.
4. Students record their own points on their own score card.
5. Students use 1 score card each week.
6. Students circle the last point they earn each day.
7. Students report points to the teacher on the last day of tutoring for the week.
8. Students must be good sports.

Rules for Tutoring

1. Talk only to your partner and only about tutoring.
2. Keep your voice at a low level.
3. Try your best.

Setting Up For Tutoring

1. Students get out a pencil, their tutoring folder and reading book when the teacher says, "It's time for peer tutoring."
2. Move to you partner when the teacher says, "Movers move."
    - Moving Rules
        - Leave your chair when you move.
        - Move quickly and quietly.
        - Take your tutoring materials.
        - Quietly move a chair nearby.
3. Set up your desk quickly and quietly.
4. Cover the first pages for Repeated Reading.
5. Look at the teacher for the command to begin.

Lesson 2:
Repeated Readings

In Lesson 2, students will learn:

1. The procedures for Repeated Readings.
2. Error types and how to correct them.
3. How to earn points during Repeated Readings.

****

For this lesson you will need to post a reading assignment

****

Lesson 2: Outline

Features of Repeated Reading

1. 1st readers read 1st
2. Each reader will read 3 different passages.
3. The reader will read each passage 3 times each while being timed.
4. Readers will read a passage for 1 minute each time.
5. The objective for the reader is to read faster with less mistakes.
6. While the reader reads, the tutor follows along and marks errors as they occur.
7. After the 1 minute is up, the tutor corrects all errors.
8. Last, the tutor counts the number of lines the reader read correctly.
9. The reader marks 1 point for every line that is error free.
10. After the 1st reader reads, students switch roles and the entire process is repeated.

Jobs Before Tutoring

1. Take materials out of folder.
   - Set help card at top of desk.
   - Set felt cleaner at top of desk.
   - Place china marker at top of desk.
   - Take plastic page protector and paper clip out.
   - Turn to the week's Score Card.
2. Look at assignment on board.
3. Cover the first 2 pages with the plastic page protector and clip it in place.

***** This whole process should take no more that 2 minutes. ****

Readers' Jobs During Repeated Readings

1. Read sentences quickly.
2. Read sentences correctly.
3. Correct missed words.
4. Record points as earned.

Tutors Jobs During Repeated Readings

1. Listen and follow along as the reader reads.
2. Mark any words read incorrectly with the grease pencil.
3. Place a double slash (//) after the last word read.
4. Correct all words missed.
5. Count the number of lines read correctly and tell the reader how many to mark.
6. Clean the plastic page protector.
7. After the third reading, move the page protector to the new page.
8. Tell the reader they did a good job.

Repeated Reading Jobs

Reader's Jobs:

1. Read sentences quickly.
2. Read sentences correctly.
3. To correct the words you don't know
4. Mark the number of points earned on the Score Card.

Repeated Reading Jobs

Tutor's Jobs:

1. Mark how much your partner reads. (///)
2. Mark and correct the words your doesn't know.
3. Count the number of lines your partner reads correctly.
4. Let your partner know when he or she is doing a good job.

Kinds of Errors

Tutors must learns to listen for errors. They keep track of all errors by placing a slash (/) over missed words on top of the plastic page protector. Tutors wait until after the 1 minute reading is finished before correcting mistakes. Tutors are taught to recognize the following 4 types of errors.

1. Saying the wrong word.
2. Leaving out a word.
3. Adding a word.
4. Waiting longer than 4 seconds.
   - After 4 seconds the tutor says "Skip it" and the reader continues reading.

If the reader is able to correct a mistake, it is not counted as a mistake. The tutor should circle that word, if it has already been slashed.

*********** Self-corrections are not counted as errors. ************

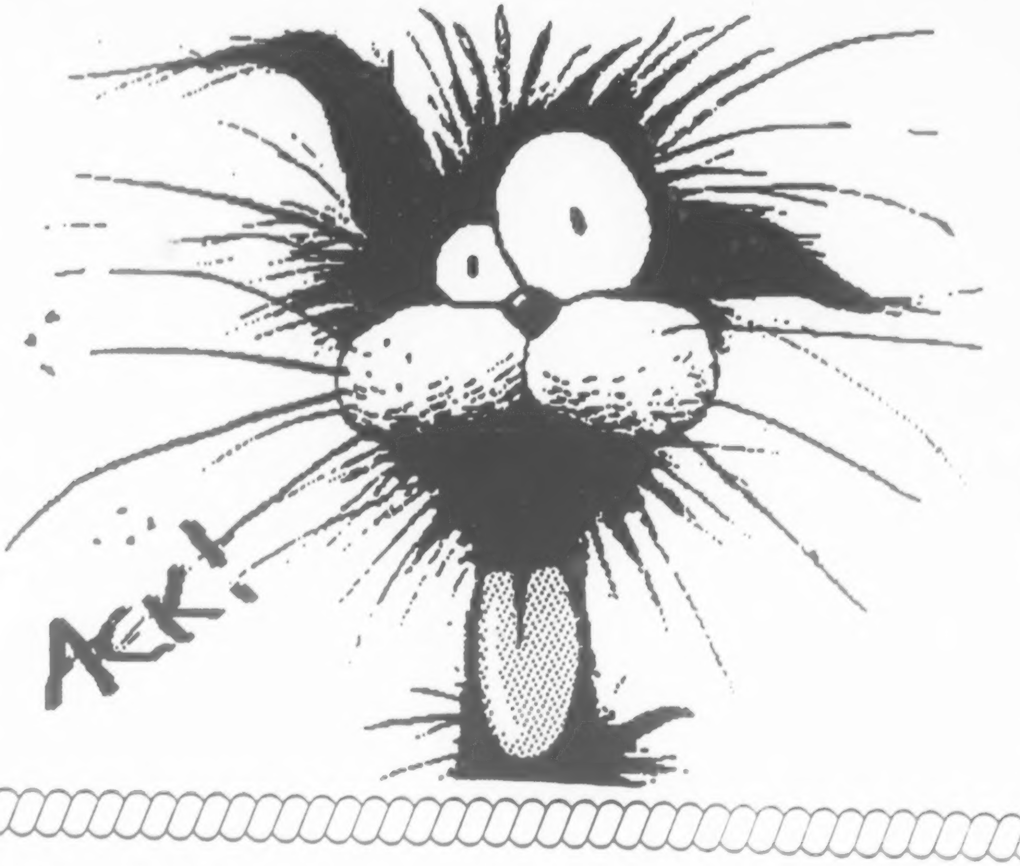
Correction Procedure

After the 1 minute reading, the tutor will correct the reader on all
mistakes. The tutor will have about 20 seconds to correct mistakes. If the tutor is not finished in the allotted time, he/she must stop any way. The procedures are a follows:

1. Wait until the minute is over.
2. Point to each word missed so that the reader can see the word.
3. Say, "This word is _________."
   Ask, " What word?"
4. Repeat process for each word missed.

Kinds of Errors

1. Saying the wrong word.
2. Leaving out a word.
3. Adding a word.
4. Waiting longer than 4 seconds.



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How to Correct

"That word is ______."

"What word?"

Counting Points

After the tutor has corrected all the errors, he/she must quickly count the number lines read correctly, tell the reader how many points to record and clean the plastic page protector. The procedures for counting points are as follows.

1. Count each line that does **NOT** have a slash.
2. The reader mark 1 point for each error free line.
3. Tutor watches the reader mark points to make sure no cheating occurs while cleaning the plastic page protector.

Time Frame

1. 1 minute for reading.
2. 30 seconds to correct errors, count lines and mark points.
3. 15 seconds to move page protectors when necessary.
4. Students must move quickly.
5. If a student is not ready, the teacher should **NOT** wait!
6. Repeated reading can take a very long time if students do not keep up.
7. Each set of 3 readings of 1 passage should take no, more than **5 minutes**.

Repeated Reading

How it works

1. One minute timed reading.
   (Tutors mark errors and mark the last word read.)
2. Correct mistakes.
3. Count number of lines with no errors.
4. Clean page protector

and

Mark points on score card.

➡ Go Again

Repeat this process 3 times on the same passage.

Do 3 different passages in all.

Lesson 3:
Putting It All Together

In this lesson, students will learn:

To do all the activities associated with peer-mediated reading instruction in the actual sequence.

****

In this lesson the teacher will actually walk the students through tutoring. The Peabody-Vanderbilt researcher will help.

****

Materials

1. Stopwatch
2. Peer-Mediated Reading Script

Lesson 3: Outline

Getting Set Up (2 minutes maximum)

1. Students get out materials
2. Move procedure
3. Set up desk
4. Cover reading book pages.

1st Readers Repeated Reading

1. Timed 1 minute reading
   -readers read
   -tutors listen and mark mistakes
2. Minute ends - tutor makes a double slash after the last word read.
3. 30 seconds to correct mistakes, count lines, mark points and clean page protector.
4. Repeat on same passage 2 more times.
5. After 3 readings of the same passage, tutors move plastic page protector (15 seconds).
6. Repeated entire process on two more passages.

2nd Reader's Repeated Reading

1. Timed 1 minute reading of new material
   1st and 2nd readers read different passages
   -readers read
   -tutors listen and mark mistakes
2. Minute ends - tutor makes a double slash after the last word read.
3. 30 seconds to correct mistakes, count lines, mark points and clean plastic page protector.
4. Repeat on same passage 2 more times.
5. After 3 readings of the same passage, tutors move plastic page protector (15 seconds).
6. Repeated entire process on two more passages.

Clean Up

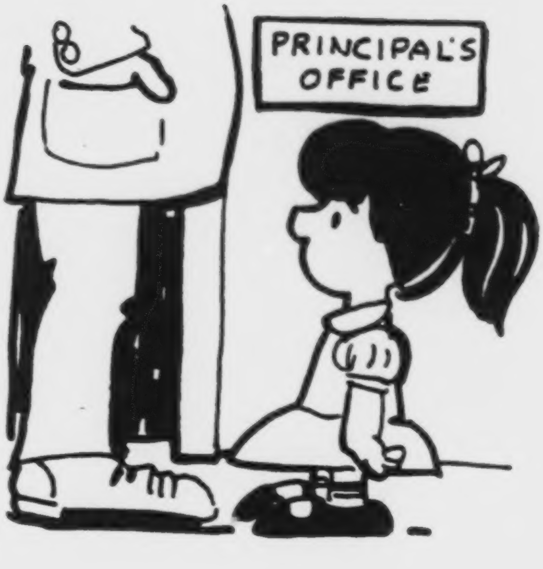
1. After the last repeated reading on the 3rd passage by the 2nd reader, it is time to clean up.
2. Give Bonus points for anything all students did well.
3. Students circle the last point earned for the day.
4. Students put everything back in their folders quickly and quietly
5. Movers return to their desks.

Announcing the Winning Team

1. This only happens on the last day of the week.
2. Call on students to report the last point they earned for the week.
3. Record points on Team Assignment Chart.
4. Add points for each Team
5. Announce the wining team and the runner-up team for the week
6. Post the Score Board on the Tutoring Bulletin Board

Chapter 4

Solving Potential Problems


PRINCIPAL'S OFFICE

CHAPTER IV:
SOLVING POTENTIAL PROBLEMS

In our experience, problems with implementing peer-mediated reading usually result from either incomplete training of students or inadequate monitoring on the teacher's part. Although we will provide the initial training, it is important that you anticipate potential problems and establish a remediation procedure just in case a problem surfaces.

Implementation Problems

Monitoring the Progress of the Program

Because this is a federally funded research project, research staff will be observing your class during tutoring to make sure things are going smoothly and help you with any problems you are experiencing. Research staff will fill out a **Teacher Implementation Report** every time your class is observed. The primary purpose of the Teacher Implementation Report is to point out your implementation errors and trouble spots so that you can quickly correct them. The report will provide you with helpful feedback regarding:

1. Whether the materials necessary for tutoring are present and available in your classroom,
2. Whether you have carried out all the necessary procedures, and
3. Whether the students carry out the tutoring procedures correctly.

!!

In 1989-90, every teacher implementing peer tutoring procedures in their classrooms for the first time, implemented these procedures with 90% or better accuracy. Once the program gets going, teachers report that it is easy to implement.

!!

Solving Common Implementation Problems

Teachers are bound to have some students who create problems. After using peer-mediated instruction across a variety of different classrooms, grade levels, and subjects, we have found that four specific problems occur most often. These are:

1. **Students are loud, disruptive, or off-task before, during, and after tutoring.**
2. **Students take too much time to complete various tutoring tasks.**
3. **Students fail to follow the tutoring procedure correctly.**
4. **Students cheat with respect to point recording and point scores.**

The next section describes a variety of simple solutions to each of the problems listed above.

Students are loud, disruptive, or off-task before, during, and after tutoring.

This is probably the most troublesome of the four problems. There are several reasons for this. First, peer-mediated reading instruction is usually the only classroom instructional activity that permits students to speak to and interact with their classmates. In addition, the tutoring program contains several components (e.g., points, team competition, etc.) that generate enthusiasm and excitement from the students and they may turn into excessively loud or disruptive classroom behavior.

Therefore, our first recommendation is that you enforce the set of tutoring rules and that you clearly specify your expectations to your students.

Although rules such as these are helpful, their mere presence will probably not prevent students from exhibiting some inappropriate behaviors. You must routinely enforce these classroom rules through close supervision, and feedback. Remind students that they are working as a team and that if they choose to be disruptive that they will not earn as many points for their team.

While we do not recommend the use of yelling or severe punishment, occasionally it may be necessary to remove a student from tutoring temporarily. If you find it necessary to remove a student, always give them the choice to continue working for the team or to stop earning points for the team. If you treat tutoring as a privilege, your students will not want to be removed. Additionally, it is not recommended that you send the student out of the room. Instead, give the student a set of worksheets or other independent work, so that the student knows that he cannot get out of doing work by being disruptive.

On the positive side, **you should provide special bonus points** and thanks to the students or team(s) who show exemplary behavior during tutoring. Other possible rewards for students include the opportunity to be a classroom helper, to line up first for recess or lunch on that day, etc.

On the less positive side, you may withdraw the ability to earn points for a **short** period of time for those students who continually disregard the rules. For example, perhaps these students lose point earning ability after receiving two warnings.

Always make sure that you frame your warning as the student's choice. (i.e., "If you choose to ____, you will choose to stop earning points for your team.") It may also be necessary to point out to the student that his teammates will not be happy about a member of the team choosing not, to earn points. Most importantly, if the student shows any sign of being willing to comply, reinstate point earning privileges or immediately reward him/her with bonus points.

!!

We stress that you **Try Positive Procedures First**.

!!

Another factor contributing to this problem is the manner in which instructions are given to the students and the degree to which students comply. **A very structured approach that is clear and direct is best.**

One final point merits discussion. As indicated earlier, the tutoring game is a classroom activity that permits students to talk and interact with their classmates. Given the novelty of this learning structure, you may need to make certain adjustments initially. For example, we often hear teachers comment during their first week of the tutoring game, "It's difficult to grow accustomed to the idea of students talking" or "It sure seems strange to hear all this noise."

We generally provide two responses to these concerns. First, we reemphasize the **numerous benefits** that tutoring provides to the students in the classroom. Second, we make the point that permitting students to interact with one another during tutoring does not necessarily mean that they will expect to interact during other instructional periods of the day. You should simply inform the students that the tutoring rules are different than the rules established for non-tutoring activities. Again, the extent to which any classroom rule is followed depends upon the consequences that you provide when students follow or break the rules.

STUDENTS TAKE TOO MUCH TIME TO COMPLETE VARIOUS TASKS

Under ideal conditions, transition periods should run very smoothly with minimal delays. The length of time elapsing between activities needs to be quick or you will not be able to provide your students with important teacher-directed instruction. However, our past experience indicates that the time allotments we have specified are difficult to adhear to at first.

We firmly believe that your students will become faster at their transitions if you are firm in your time allotments. We view waiting for students to get ready as excessive delays. Your strategy should be to **reward those students who are ready in the allotted time frame with ample bonus points** and tell the slow students that if they are not ready that you will start without them. Point out to them that if they are not ready when you say to begin a new Repeated Reading that they will not earn as many points.

STUDENTS FAIL TO FOLLOW THE TUTORING PROCEDURE CORRECTLY.

A third problem relates to the tutor/reader roles and procedures. Our experience indicates that some students do not follow the established procedures on a consistent basis. **If you find that a number of students are having difficulty, reteach the procedures to the entire group.** If the problems are restricted to a few students, schedule a time to reteach only those students. In all cases, we recommend the following remediation strategy:

Teach

practice

reinforce

review

You must monitor and provide bonus points for correct tutoring behaviors. You must supervise student's responding in order to achieve a successful program. If you walk around the classroom, monitoring tutoring behaviors by providing praise, giving bonus points and correction, and answering students' questions, you will reduce the number of problems.

Also, our experience indicates that some teachers enjoy their new role (as described in this manual), while other teachers are reluctant to try the peer-mediated reading procedures. We believe that the trade-off is simple; those who complete these tasks consistently and conscientiously will experience fewer problems and both you and your students will obtain greater benefits from the program.

Interestingly enough, **we have found a direct relationship between teachers experiencing problems with tutor/reader interactions and their failure to provide bonus points for the children's tutoring behavior.** Therefore, we strongly recommend that you conduct the tutoring procedures according to the guidelines described throughout this manual.

STUDENTS CHEAT WITH RESPECT TO POINT RECORDING AND POINT SCORES

From the beginning of the program, you must insure that students use the points correctly. Monitor each session to prevent cheating. Teach the students that the number of points they earn is related to the amount of work they have completed. Monitor students' point sheets at random so that all children learn that you will be monitoring their efforts.

Watch the Team Point Chart to see if any students who have large jumps in point totals. A gain of 40 points is laudatory, but a gain of 400 points is certainly suspicious. These monitoring checks and feedback to students prevent the students from reporting unearned points. Let the students know you are on top of this. Do not tolerate grossly inaccurate point totals. This will ruin the program.

A FINAL THOUGHT

Of course, it is not possible to provide procedures for all problems that may arise in the course of this project. We are counting on you to use your professional judgment in handling unexpected situations. We like feedback on what types of problems arose and how you handled them. The ideas help us with future projects.

Although your first implementation will likely be awkward and hectic, you will find that after a few weeks the program will run smoothly, improve academic performance, and increase social interactions among class members.

We expect that you will find this a rewarding experience.

Good luck!

PEER-MEDIATED READING SCRIPT

Use this script to help you orchestrate peer-mediated reading. The commands for each step are written out for you.

Preparation: 2 minutes

1. **It's time for peer tutoring. Get your materials out.**
2. (optional) **Movers stand.**
3. (optional) **Movers move.**
4. **Get your materials set up.**

1st Reader's Repeated Readings (15 minutes)

1. **Get ready for Repeated Readings. You should be on page ____. 1st readers point to the first word of the 1st passage. 1st tutors point with you marker. Get ready for your first Repeated Reading. Remember to read as quickly and correctly as you can.** (Hold up stopwatch) **Get ready, Begin!**

   (Time for 1 minute. Circulate and monitor students)

2. (After 1 minute). **Stop, Correct errors, count lines and mark points.** (Clear watch, start timing again)

3. (after 20 seconds) **Mark your points, clean your plastic page protector and get ready to go again.**

4. (Hold up your stopwatch) **Its time for the second Repeated Reading. Try to read more than you did last time. Get ready, Begin!**

   (Time for 1 minute. Circulate and monitor students)

5. (After 1 minute). **Stop, Correct errors, count lines and mark points.** (Clear watch, start timing again)

6. (after 20 seconds) **Mark your points, clean your plastic page protector and get ready to go again.**

7. (Hold up your stopwatch)
Its time for the third Repeated Reading. Try to read even more this time. Get ready, Begin!

(Time for 1 minute. Circulate and monitor students)

8. (After 1 minute).
Stop, Correct errors, count lines and mark points.
(Clear watch, start timing again)

9. (after 20 seconds)
Mark your points, clean your plastic page protector and get ready to go again.

10. Repeat whole process on 2 new passages.
It's time for the next passage. Move your plastic page protector to the next two pages. (Allow 15 seconds)
(repeat steps 1-9)

2nd Readers Repeated Readings

1. **It's time to switch roles. Readers are tutors now and tutors are readers now. Get you plastic page protectors ready.** (Allow 1 minute).

2. Repeat process for 1st reader steps 1 - 10.

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Appendix B

Repeated Reading Teacher's Procedural Manual

Peer-Mediated Resource Reading

Students Helping Students

Principal Investigator
Lynn S. Fuchs, Ph.D.

Project Director
Patricia G. Mathes, M.Ed.

This manual was developed under a grant from the U.S. Department of Education, Office of Special Education and Rehabilitative Services. The contents do not however refelect the policy of the Department of Education and no endorsement should be inferred.

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PEER-MEDIATED RESOURCE READING

Preface

This manual was developed for Peer-Mediated Resource Reading, a research and demonstration project sponsored by the Department of Education. The purpose of this project is to work cooperatively with resource room teachers to develop, implement, and evaluate the effectiveness of methods designed to enhance the quality of instructional services provided mildly handicapped students. This research focuses on the class wide application of peer-mediated reading instruction and how it effects students' reading fluency and comprehension. The procedures described should complement your current reading instruction program by structuring additional opportunities for your students to read and receive feedback and reinforcement.

This manual explains the procedures for introducing, implementing, and monitoring the project's version of peer-mediated reading instruction. The basic procedures rely heavily on tutoring procedures developed by Charlie Greenwood, Joe Delquadri, and Judith Carta at the University of Kansas (Classwide Peer Tutoring) and on research conducted in mainstream classrooms at George Peabody College by Deborah Simmons, Lynn Fuchs, Doug Fuchs, Janie Pate, and Patricia Mathes (Peabody Classwide Peer Coaching). We appreciate the foundation developed by these individuals and acknowledge the integral part these methods play in the overall peer-mediatied reading program described in this manual.

We wish to recognize Dr. Deborah Simmons at Peabody College for writing an earlier version of this manual for another project and we wish to thank her for allowing us to use her work as a basis for this manual.

The purpose of this project is to expand past research by applying peer-mediated reading procedures which have been shown to be effective in mainstream classrooms to resource rooms. In this project, your special education students will serve as both readers and tutors. Previous research has demonstrated that when mildly handicapped students are given the role of serving as tutor they achieve better than mildly handicapped students who serve only as readers.

Introduction

We believe teachers can make a difference in student achievement whether that student is handicapped or normally achieving. With your assistance, we will examine how substantial that impact can be on learning disabled students. We appreciate your participation in the project and look forward to your assistance and feedback.

To test the potential of peer-mediated reading instruction in resource rooms, **it is important that you follow the prescribed methods as closely as possible**. If practiced as prescribed, these methods should make a positive difference in your students' reading achievement.

Throughout the course of the project, our roles are to (a) assist you in providing optimal training to your students, (b) monitor implementation of the procedures, and (c) evaluate the effectiveness of the intervention. The primary objective of our mission is to train students to conduct and participate in tutoring sessions that result in improved reading achievement and social skills. This is a joint effort, thus, it is important that you **communicate your concerns, ideas, and suggestions** to us so that we can respond accordingly.

Thank you for your commitment to our project. We are enthusiastic and optimistic that our coordinated energy and efforts will benefit all involved. Our optimism is grounded in the demonstration that students achieve in classrooms when teachers accept responsibility for **all** students and implement instructional methods that accommodate the range of skills and needs in the classroom.

MANUAL OBJECTIVES

After reading this manual, you will be able to:

1. Define and state the rationale for peer-mediated reading instruction
2. Pair students for peer tutoring and assign pairs to teams.
3. Teach students to serve as tutors.
4. Teach students to serve as readers.
5. Collect student and team points.
6. Implement the steps of the project's peer tutoring method.

Chapter 1

Introduction

CHAPTER I:
INTRODUCTION TO PEER-MEDIATED INSTRUCTION

Definition and Rationale

You are most likely familiar with the concept of peer tutoring. Peer-mediated instruction is a synonym for peer tutoring and is an activity where students within the classroom work together to enhance their academic performance.

In this project's version of peer tutoring, all students in the class will serve both as tutors and readers. Experimental studies indicate that when consistently implemented, this type of peer tutoring produces a classroom climate that increases the amount of learning time, material covered, and skills mastered, decreasing off-task and disruptive behavior.

Peer-mediated instruction differs from most other instructional methods in several important ways:

* It uses peers to supervise responding and practice.

* It uses a game format, including points and competing teams, to motivate students and maintain their interest.

Peer-mediated reading instruction is an innovative and resourceful means of addressing the diverse needs of students in your classroom. It broadens your options for providing reading practice, feedback, and instruction.

Research conducted during the past two years at Peabody College - Vanderbilt indicates that mildly handicapped students are capable of handling the responsibilities required in peer-mediated reading. Additionally, the research indicates that mildly handicapped students who participate make significantly greater reading gains than those who do not!

OVERVIEW OF THE PEER TUTORING PROGRAM

Peer-Mediated Resource Reading will utilize sustained oral reading practice. Research indicates that simple oral reading practice can greatly improve students reading performance. A brief description of the procedures follows. A more elaborate description appears in latter sections of this manual.

The procedures described in this manual will be implemented in your classroom for **10 weeks**.

SUSTAINED ORAL READING PRACTICE

What It Is: Sustained oral reading practice has been shown to improve reading fluency and comprehension. Peer-mediated reading instruction provides students with the opportunity to practice and become fluent with their reading skills. Typically, learning disabled students do not receive adequate oral reading practice. Additionally, research indicates that oral reading practice may actually help students improve their reading ability better than silent reading practice.

How: During peer-mediated reading, the teacher announces to "get ready for peer-mediated reading; readers begin reading." All readers read as quickly and correctly as they can simultaneously. The teacher times for 9 minutes. Students earn points for each sentence of text they read without making an error. When an error occurs, the tutor corrects the reader immediately.

When: Peer tutoring will occur **3 days per week**.

How Long: The whole process will take 23 minutes. This includes 9 minutes for each reader to read and 5 minutes of transition time.

Materials

Materials for peer tutoring will include:

1. The student's reading book
2. Tutoring Folder
3. Help Card
4. Weekly Score Cards

With the exception of the reading book, all of these materials will be provided for all of your students by the project. Reading books will be provided for target students only. Other students will use their normal reading book.

Why Is Peer-Mediated Reading Important?

One of the most persistent problems that classroom teachers face is how to ensure that all students engage in learning tasks and receive sufficient practice to master these tasks. We have found that it is simply not enough to expose students to academic materials or to put students into stimulating environments. Students must actively engage in the learning task in order to perform well. Students must interact directly with the learning task, and not just watch or listen to it. **Thus, the peer-mediated reading program is designed to double or triple the amount of practice that all students are currently receiving. Compared to other teaching methods, peer-mediated reading increases all students' on-task behavior and their practice of academic tasks. This is true even for students who are the most delayed or difficult to motivate.** As a result, peer-mediated reading increases reading fluency and comprehension and builds student self-confidence and self-esteem.

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GOALS OF PEER-MEDIATED RESOURCE READING

****

Goals for the Teacher

Objective 1: Teachers will implement peer-mediated reading sessions in their resource classroom.

Objective 2: Teachers will reinforce student and team achievement.

****

The primary goal of this program is to facilitate student mastery of reading skills. To accomplish this goal, the teacher must implement the procedures described in this manual in a consistent and orderly manner. **You should be aware that deviations from the procedures described in this manual dramatically decrease the effectiveness of peer-mediated reading in your classroom.** Thus, quality implementation is essential to reaping the benefits of the program. To achieve these results, the teacher must have two short-term goals:

(1) **Carefully READ this manual.**

(2) **Implement the program as described without modification.**

****

Goals for the Students

Objective: 1) Students will increase their reading rate and reduce the number of errors committed.

2) Students will work cooperatively with other students in their reading class.

****

The goals for the students in this program include improvement in reading fluency, comprehension, and peer acceptance. To achieve these goals, the students must learn two roles: the tutor role and the reader role.

The tutor role entails directing and supervising the tutoring session. This requires learning how to: (1) present tasks and directions to the reader, (2) monitor reading and correct word recognition errors, (3) award points based on the reader's performance.

The reader role involves actively practicing the material presented by the tutor in order to earn points for the reader's team. The reader must learn how to read quickly and accurately.

Chapter 2

Preparing for Peer-Mediated Instruction

CHAPTER II:
PREPARING FOR PEER-MEDIATED READING INSTRUCTION

In this chapter, we will discuss the preparations necessary for implementing peer-mediated reading in your resource classroom. If you are reading this manual for the first time, our advice is to read all of the material to develop a complete understanding of the program.

Advanced planning and preparation of materials play a big part in implementing the program. The purpose of this chapter is to outline the preliminary steps you need to complete in preparation for tutoring.

Preliminary Activities

1. Scheduling time for peer-mediated reading (Weekly Tutoring Schedule)

2. Designating pairs and teams (Tutoring Teams List)

5. Becoming familiar with point awarding and reporting procedures

6. Preparing and organizing materials, charts, and lists for tutoring

Step I: Scheduling Time for Peer Tutoring

The first step is to determine when you will fit the peer-mediated reading sessions into your weekly schedule. We ask that you implement peer-mediated reading three times per week. To determine your schedule, you need to refer to your weekly lesson plan and your district's suggestions about time usage for each academic subject. A sample weekly schedule follows.

Scheduling peer-mediated reading is a major instructional decision. Peer-mediated reading should be used as a replacement for one or more elements of an existing program, (e.g., assigned worksheets or independent activities; not teacher-directed instruction). The goal is to remediate students' fluency and comprehension deficits by increasing both the time available and opportunities for direct practice. In this program, we want to replace independent seatwork with direct practice in reading, while keeping your teacher-directed time intact.

!!

Research indicates that the more time students spend working independently or completing worksheets, the less achievement they make.

!!

****

In 1989-1990, we found that replacing part of reading instruction time with peer-mediated reading instruction resulted in significant achievement gains!

****

Recommendations for Scheduling

1. Schedule a time that will allow tutoring to occur 3 times per week for 25 minute sessions.

2. Conduct tutoring sessions at the same time each day.

3. Reserve part of reading instruction for teacher-directed activity to cover specific reading objectives not addressed by peer-mediated reading. Schedule the remaining time for peer-mediated reading. Reduce the amount of independent activities you ask your students to complete and use that time for peer-mediated reading.

* A form for scheduling weekly peer-mediated reading sessions follows.

****
To Do: Complete the Weekly Tutoring Schedule
****

Check off as completed:

1. ____ I have scheduled Peer-Mediated Reading 3 times a week.

2. ____ I have scheduled 25 minutes for each session.

Weekly Tutoring Schedule

Block in tutoring time and days.

	Monday	Tuesday	Wednesday	Thursday	Friday
7:30					
7:40					
7:50					
8:00					
8:10					
8:20					
8:30					
8:40					
8:50					
9:00					
9:10					
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1:30					
1:40					
1:40					
2:00					
2:10					
2:20					
2:30					

STEP 2: Selecting Peer-Mediated Reading Pairs and Weekly Teams

Determining Tutor Pairs

Students will be paired with the same tutoring partner for the entire 10 weeks; therefore, it is important that they are paired appropriately. Tutoring pairs will be determined by the research staff. Your students will be given a short reading test which will let us see which students are similar in their reading skill. Students of near equal abilities will be paired together. Sometimes it may be necessary to pair students who are reading in adjacent reading levels. However, students who are reading the same materials (or in the same reading group) will provide the most appropriate practice.

After we have paired your students for peer-mediated reading, we will ask you to review the pairings to be sure that we have paired students with peers with whom they will work cooperatively. We want students paired with socially compatible partners.

Handling Uneven Numbers of Students

Sometimes classrooms will have an uneven number of students. This may change from day-to-day depending on students' attendance patterns. If this happens, there are three options you might consider:

1. If more than one student is absent, the two students without partners may be paired. If the students are in different books, the pair should use the lower reader's book.
2. Another option is to form a triad. Here three students work together. Roles are changed so that all students have an opportunity to practice their assignments. In this case, each student would read 2 passages three times each.
3. Please to not place target students in a triad, unless you absolutely have to!

Team Assignment Chart

Week: ____________________

Team:

Points	1st Reader	1st Tutor	Points
	Team	Total	

Team:

Points	1st Reader	1st Tutor	Points
	Team	Total	

Assigning Pairs to Teams

Once students are paired, you need to assign pairs to teams. **Team assignments will change each week.** Each week you will move pairs around so that students get to be on different teams throughout the 10 week period. Changing teams each week ensures that no team is consistently stronger.

The purpose of teams is not only to motivate students, but also to instill a sense of contribution to the team and cooperation with peers. Each student's daily score contributes to the overall team score, which in turn is used to determine the weekly winnin team. Thus, students are accountable for their individual score as well as their team score.

It is important to create teams of near equal abilities. This will require distributing an equal number of high achieving, average achieving, and low achieving pairs to each team. Use the **Team Assignment Chart** which follows to record student team assignments and save it as a permanent record. Team assignments can be made ahead of time for several weeks and recorded on the Team Assignment Chart. This chart will also be used to record weekly points earned.

If you have an odd number of pairs (6 Red pairs and 7 Blue pairs), the extra pair's score will be counted for both teams.

****

To Do:
Pair Students and Assign to Teams
Record this information on the Team Assignment Chart

****

STEP 3: Awarding and Recording Points

!!

THE POWER OF THE POINT!

Points have proven to be a very effective motivator for mildly handicapped students like yours!

!!

Peer-mediated reading uses a game format to maintain student interest and motivation. In the "tutoring game", students earn points that contribute to the team score.

The reader earns points according to his/her performance during peer-mediated reading activities. Readers earn points for the number of sentences they read correctly. Tutors earn bonus point for being "good tutors." In addition, teachers award bonus points for other appropriate behaviors.

****

Our past experience indicates that teacher who make frequent use of bonus points have less problems during tutoring.

****

Readers can earn bonus points by:

- Reading sentences quickly and clearly.
- Working cooperatively with the tutor.
- Getting materials for tutoring quickly and quietly.
- Other activities determined by the teacher.

Tutors earn bonus points by:

- Listening and following along as their partner reads.
- Correcting reader's mistakes quickly appropriately.
- Awarding the correct number of points.
- Other activities designated by the teacher.

Bonus Points are your quality control procedure. Bonus Points allow you to reinforce the correct tutoring skills. You should **give bonus point freely**. However, be specific about why you are giving them. On the following page is a list of behaviors you should reward with bonus points. **Post this list in your classroom as a reminder to your students.**

****

Examples of Giving Bonus Points

"Good correcting Gabriel. Give yourself 2 bonus points"

"I like the way Emily and Tyron are working together. Each of you gets 5 extra bonus points!"

"Good getting your materials ready quickly and quietly. Everybody, give yourselves 5 bonus points!"

****

Bonus Points

Tutors can earn extra points for:

☞ have your tutoring material in the correct place.
☞ talk only about tutoring.
☞ keep your voice at a quiet level.
☞ listen to your partner read.
☞ help your partner with hard words.
☞ give the correct number of points to the player.
☞ keep track of points.
☞ praise your partner for doing a good job.
☞ give it your best!

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☞ Bonus Points

Readers earn extra points for:

- ☞ have your tutoring material in the correct place.
- ☞ talk only about tutoring.
- ☞ keep your voice at a quiet level.
- ☞ read clearly and correctly.
- ☞ correct the words you miss.
- ☞ praise your partner for doing a good job.
- ☞ give it your best!

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The Score Card

The Score Card is for individual students to record their daily points. As students earn point, they place a slash through the numbers on the score card. Students will use **1 score card for an entire week**. At the end on each day, they will circle the last point that they earned. On the next day tutoring occurs, they will begin slashing points on the next number.

Each Friday, students will report their total points on their score card, which you will record on the Team Assignment Chart. Next you will total each teams' points and write the weekly point total for each team on the **Score Board** which follows.

Score Card

Name:____________________ **Week**________________________

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81	82	83	84
85	86	87	88	89	90	91	92	93	94	95	96
97	98	99	100	101	102	103	104	105	106	107	108
109	110	111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130	131	132
133	134	135	136	137	138	139	140	141	142	143	144
145	146	147	148	149	150	151	152	153	154	155	156
157	158	159	160	161	162	163	164	165	166	167	168
169	170	171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190	191	192
193	194	195	196	197	198	199	200	201	202	203	204
205	206	207	208	209	210	211	212	213	214	215	216
217	218	219	220	221	222	223	224	225	226	227	228
229	230	231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250	251	252
253	254	255	256	257	258	259	260	261	262	263	264
265	266	267	268	269	270	271	272	273	274	275	276
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599 600

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Score Board

Team

score

Team

score

STEP 4: Getting Students To and From Their Partners

!!

You will need to organize your classroom to
MINIMIZE
transition time.

!!

For peer-mediated reading to happen, student pairs must sit next to each other. You have two options for arranging partners to be seated together.

OPTION 1: Permanent Seating

Assign readers and tutors adjacent seats for the 10 weeks they are paired. This eliminates the need for physical movement.

OPTION 2: Move/Stay Procedure

- Designate one member of the pair to be the mover and one to be the stayer. Write this on the Team Assignment Sheet and tell students their role. Teach students to get their materials ready and to move quickly and quietly to their partner.
- Students will remain a mover or a stayer for the entire 10 week period.
- Make sure that you have students evenly distributed throughout your room. You need to avoid having all students move to one side or area of the room.

STEP 5: Preparing and Organizing Materials

To facilitate effective management and pacing of the tutoring session, all materials must be assembled and ready.

TEACHER MATERIALS

1. A **timer** for the teacher to time the tutoring sessions and the point recording period.
2. A **calculator** for adding team points during the point reporting period.
3. Team Assignment Chart
4. Bonus Point Reminder
5. Teacher Presentation Script

STUDENT MATERIALS

1. Instructionally appropriate reading textbook (Target students' books will be provided)
2. Tutoring folder
   - 11 score cards
   - Help Card
   - Paper Clip
3. Pencil

****

All materials will be provided for you
except for a calculator and student pencil

****

Organize students' reading books in advance and designate a procedure for distributing these materials quickly. You should be able to get the session going within **2 minutes**. The students may have their books already in their desks, or the books may have to be passed out by student helpers. If the books are passed out, make them available in an organized fashion. Some teachers stack books by levels on a table so that helpers can get to the appropriate books quickly. Problems arise if there is not an efficient means for passing out and collecting books.

PREPARATION CHECK

1. Do you know how to assign students to pairs?
2. Do you know how to assign students to teams?
3. How often do students stay with the same partner?
4. How often do pairs stay on the same team?
5. Do you understand the move/stay procedure?
6. What is the purpose of student points?
7. How can readers earn points?
8. How can readers earn bonus points?
9. How can tutors earn bonus points?
10. Where do you record the bonus points?
11. Where do students record daily points?
12. How often do you record student points?
13. Which form is used to record weekly points?

!!

TO DO:
Make a Tutoring Bulletin Board
Post:
Team/Pairs Assignments
Score Board
Tutoring Rules
Bonus Point Reminders

!!

Chapter 3

Training Students to Tutor

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CHAPTER III:
TRAINING STUDENTS TO TUTOR

!!

Training will be done by Peabody-Vanderbilt Staff.

YOU WILL BE AN INTEGRAL PART OF TRAINING.

Please plan to be actively involved.

!!

This chapter details the procedures for conducting this project's tutoring program. Student training sessions will be conducted by the Peabody-Vanderbilt research staff. However, if at any time you feel your students need refreshing on any of the steps, use your copy of the training outline to reteach the skill. Before introducing the reading program, it is important that the following preliminary procedures are well-established:

??

Preliminary Checklist

1. ___ Time has been scheduled for peer-mediated reading.
2. ___ Students have been assigned in pairs.
3. ___ Pairs have been assigned to teams.
4. ___ Reading texts have been selected.
5. ___ Necessary materials have been prepared and organized.
6. ___ Teacher is familiar with procedure for awarding and recording points.

??

Training Materials

Once the previous steps are established, be sure you have the following materials and equipment **before training** begins:

1. Overhead Projector

4. Student Books

3. Peer-Mediated Reading Script

Getting Students Ready for Tutoring

In this section, we detail the procedures for training students to use peer-mediated reading instruction. These exercises are to be completed before you actually attempt to implement the program. Your students must be able to perform these exercises well for the program to be a success. During the training sessions, your students will (a) learn about the tutoring program, (b) observe correct implementation of procedures, and (c) practice the tutoring procedures. We have divided these exercises into three lessons which are estimated to take 50 minutes each.

LESSON 1:
GENERAL FEATURES OF PEER-MEDIATED READING INSTRUCTION

In Lesson 1 Students will learn:

1. What Peer-Mediated reading instruction is.
2. How to earn and record points.
3. The peer tutoring rules.
4. The basic roles of readers and tutors.
5. How to set up materials for peer tutoring.

****

You and your students will need:

Team Assignment Chart - Filled out for week 1!

Score Board - posted

Tutoring Folders
- score cards
- paper clips
- Help card

pencils

****

Lesson 1 Outline

Critical Features of Peer-Mediated Reading

1. Everyone in the class participates at the same time.
2. A peer is a classmate.
3. Tutoring means helping your partner become a better reader.
4. Everyone will be both a tutor and a reader.
5. You will do one job first, then switch and do the other job.

Organizational Features

1. Pairs work together for 10 weeks.
2. Each pair is part of a team. Team assignments change each week.
3. Reading Assignments will be posted on the chalkboard each day.

Earning Points

1. Peer tutoring is like a game.
2. Each student earns points for his/her team.
3. Students earn points for reading quickly and correctly and for tutoring well.
4. Students record their own points on their own score card.
5. Students use 1 score card each week.
6. Students circle the last point they earn each day.
7. Students report points to the teacher on the last day of tutoring for the week.
8. Students must be good sports.

Rules for Tutoring

1. Talk only to your partner and only about tutoring.
2. Keep your voice at a low level.
3. Try your best.

Setting Up For Tutoring

1. Students get out a pencil, their tutoring folder and reading book when the teacher says, "It time for peer tutoring."
2. (Optional) Move to you partner when the teacher says, "Movers move."
   - Moving Rules
     - Leave your chair when you move.
     - Move quickly and quietly.
     - Take your tutoring materials.
     - Quietly move a chair nearby.
3. Set up your desk quickly and quietly.
4. Turn to the first page of the reading assignment.
5. Look at the teacher for the command to begin.

Tutoring Rules

1. Talk only to your partner and only about tutoring.
2. Keep your voice at a low level.
3. Try your best!

Moving Rules

1. Leave your chair when you move.
2. Move quickly and quietly
3. Take your tutoring materials.
4. Quietly move the chair or desk.

Lesson 2:
Sustained Oral Reading Procedures

In Lesson 2, students will learn:

1. The procedures for sustained oral reading practice.
2. Error types and how to correct them.
3. How to earn points during sustained oral reading.

****

For this lesson you will need to post a reading assignment

****

Lesson 2: Outline

Features of Sustained Oral Reading Practice

1. 1st readers read 1st.
2. Each reader will read for 9 minutes each.
3. The objective for the reader is to read faster with less mistakes.
4. While the reader reads, the tutor follows along.
5. The tutor corrects errors as they occur.
6. The tutor awards 2 points every time the reader reads a sentence correctly and 1 point for every sentence with only 1 error.
7. After the 1st reader reads, students switch roles and the entire process is repeated.

Jobs Before Tutoring

1. Take materials out of folder.
   - Set help card at top of desk.
   - Turn to the week's Score Card.
2. Look at assignment on board and turn to that page.

****** This whole process should take no more that 2 minutes. ******

Readers' Jobs During Sustained Oral Reading Practice

1. Read sentences quickly.
2. Read sentences correctly.
3. Correct missed words.
4. Record points as earned.

Tutors Jobs During Sustained Oral Reading Practice

1. Listen and follow along as the reader reads.
2. Correct all words missed when they are missed.
3. Tell the reader how many points to mark after each sentence.
   - 2 points for no errors.
   - 1 point for 1 error.
   - 0 points for more than 1 error.

*** The tutor will count the number of errors in each sentence on their fingers.

4. Tell the reader they did a good job.

Kinds of Errors

Tutors learn to listen for and correct errors when they occur. Tutors are taught to recognize the following 4 types of errors.

1. Saying the wrong word.
2. Leaving out a word.
3. Adding a word.
4. Waiting longer than 4 seconds.

If the reader is able to correct a mistake before the tutor corrects the mistake, it is not counted as a mistake.

*********** Self-corrections are not counted as errors. ***********

Sustained Reading Process

How it Works

1. First reader reads for 9 minutes.
2. First tutor listens and follows along.
3. Tutor corrects mistakes when they happen.
4. Tutor tells reader how many points to mark after EACH sentence.
5. Reader marks points after each sentence.
6. After 9 minutes, switch jobs *AND* repeat the whole process.
7. Second reader begins where the first reader stopped.

Sustained Reading Jobs

Tutor's Jobs:

1. Listen and follow along as your partner reads.
2. Correct missed words when they happen.
3. Tell your partner how many points to mark after each sentence.
    - 2 points for no errors.
    - 1 point or 1 error.
    - 0 points for more than 1 error.
4. Let your partner know when he or she is doing a good job.

Sustained Reading Jobs

Reader's Jobs:

1. Read sentences quickly.
2. Read sentences correctly.
3. To correct the words you don't know
4. Mark the number of points earned on the Score Card.

Correction Procedure

The correction procedure is as follows:

2. Point to the missed word so that the reader can see the word.

3. Say, "This word is _________."
   Ask, " What word?"

*** THE READER CONTINUES READING.
*** THE TUTOR HOLDS UP 1 FINGER FOR EACH MISTAKE UNTIL THE END OF THE SENTENCE

4. Repeat process for each word missed in a sentence and award points at the end of every sentence.

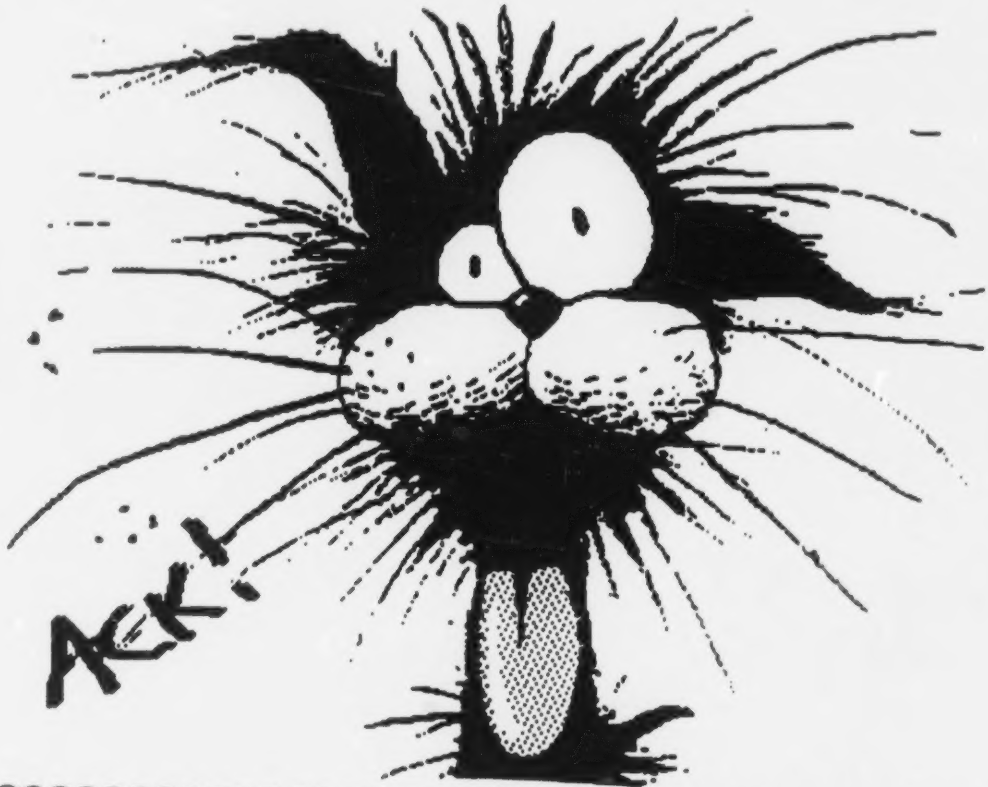
How to Correct

"That word is ______."

"What word?"

Kinds of Errors

1. Saying the wrong word.
2. Leaving out a word.
3. Adding a word.
4. Waiting longer than 4 seconds.



Lesson 3:
Putting It All Together

In this lesson, students will learn:

To do all the activities associated with peer-mediated reading instruction in the actual sequence.

****

In this lesson the teacher will actually walk the students through tutoring. The Peabody-Vanderbilt researcher will help.

****

Materials

1. Timer
2. Teacher Presentation Script

Lesson 3: Outline

Getting Set Up (2 minutes maximum)

1. Students get out materials.
2. Move procedure. (Optional)
3. Students set up their desks.
4. Students open their texts to the assigned page.
5. Students look at the teacher for the command to begin.

1st Readers Sustained Oral Reading Session (9 minutes)

****Teacher circulates among students and awards individual**** bonus points.

1. Readers read orally from their reading text.
2. Tutors follow along, listening for errors.
3. Tutors correct errors when they occur. Tutors use Help Card to gain teacher attention if they also do no know a word.
4. **Tutors award points at the end of each sentence and readers mark them on their score card.**
   - **2 points for no errors.**
   - **1 point for 1 error.**
   - 0 points for more than 1 error.
5. Teachers loudly says STOP at the end of nine minutes.

Transition

1. Teacher announces, " It's time to switch jobs."
2. First readers become tutors and 1st tutors become readers.
3. 2nd readers begin reading where the 1st readers stopped.

2nd Readers Sustained Oral Reading Session (9 minutes)

****Teacher circulates among students and awards individual**** bonus points.

1. 2nd Readers read orally from their reading text.
2. 2nd Tutors follow along, listening for errors.
3. Tutors correct errors when they occur. Tutors use Help Card to gain teacher attention if they also do no know a word.
4. Tutors award points at the end of each sentence and readers mark them on their score card.
   - 2 points for no errors.
   - 1 point for 1 error.
   - 0 points for more than 1 error.

Clean Up

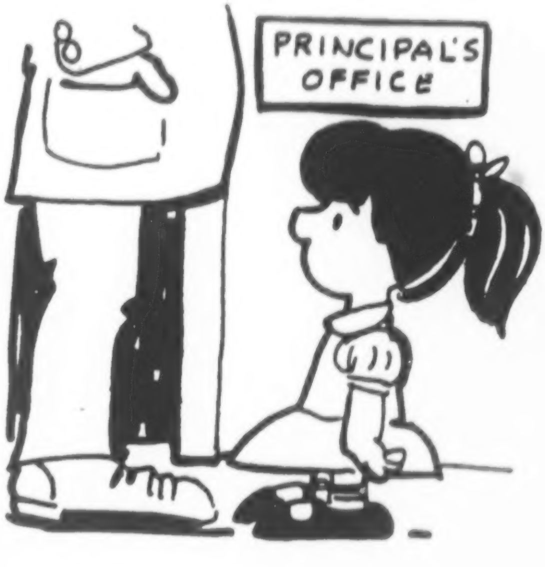
1. After the 2nd reader reads for 9 minutes, it is time to clean up.
2. The teacher gives Bonus points for anything all students did well.
3. Students circle the last point earned for the day.
4. Students put everything back in their folders quickly and quietly
5. Movers return to their desks. (Optional)

Announcing the Winning Team

1. This only happens on the last day of the week.
2. Call on students to report the last point they earned for the week.
3. Record points on Team Assignment Chart.
4. Add points for each Team
5. Announce the wining team and the runner team for the week
6. Post the score Board on the Tutoring Bulletin Board

Chapter 4

Solving Potential Problems


PRINCIPAL'S OFFICE

CHAPTER V: SOLVING POTENTIAL PROBLEMS

In our experience, problems with implementing peer-mediated reading usually result from either incomplete training of students or inadequate monitoring on the teacher's part. Although we will provide the initial training, it is important that you anticipate potential problems and establish a remediation procedure just in case a problem surfaces.

Implementation Problems

Monitoring the Progress of the Program

Because this is a federally funded research project, research staff will be observing your class during tutoring to make sure things are going smoothly and help you with any problems you are experiencing. Research staff will fill out a **Teacher Implementation Report** every time your class is observed. The primary purpose of the Teacher Implementation Report is to point out your implementation errors and trouble spots so that you can quickly correct them. The report will provide you with helpful feedback regarding:

1. Whether the materials necessary for tutoring are present and available in your classroom,
2. Whether you have carried out all the necessary procedures, and
3. Whether the students carry out the tutoring procedures correctly.

!!!

In 1989-90, every teacher implementing peer tutoring procedures in their classrooms for the first time, implemented these procedures with 90% or better accuracy. Once the program gets going, teachers report that it is easy to implement.

!!!

Solving Common Implementation Problems

Teachers are bound to have some students who create problems. After using peer-mediated instruction across a variety of different classrooms, grade levels, and subjects, we have found that four specific problems occur most often. These are:

1. **Students are loud, disruptive, or off-task before, during, and after tutoring.**
2. **Students take too much time to complete various tutoring tasks.**
3. **Students fail to follow the tutoring procedure correctly.**
4. **Students cheat with respect to point recording and point scores.**

The next section describes a variety of simple solutions to each of the problems listed above.

STUDENTS ARE LOUD, DISRUPTIVE, OR OFF-TASK

This is probably the most common and troublesome of the four problems. There are several reasons for this. First, peer-mediated reading instruction is usually the only classroom instructional activity that permits students to speak and interact with their classmates. In addition, the tutoring program contains several components (e.g., points, team competition, etc.) that generate enthusiasm and excitement from the children and they may turn into excessively loud or disruptive classroom behavior.

Therefore, our first recommendation is that you enforce the set of tutoring rules and that you clearly specify your expectations to your students.

Although rules such as these are helpful, their mere presence will probably not prevent students from exhibiting some inappropriate behaviors. You must routinely enforce these tutoringrules through close supervision, and feedback. Remind students that they are working as a team and that if they choose to be disruptive that they will not earn as many points for their team.

While we do not recommend the use of yelling or severe punishment, occasionally it may be necessary to remove a student from tutoring temporarily. If you find it necessary to remove a student, always give them the choice to continue working for the team or to stop earning points for the team. **If you treat tutoring as a privilege, your students will not want to be removed.** Additionally, it is not recommended that you send the student out of the room. Instead, give the student a set of worksheets or other independent work, so that the student knows that he cannot get out of doing work by being disruptive.

On the positive side, **you should provide special bonus points** and thanks to the students or team(s) who show exemplary behavior during tutoring. Other possible rewards for students include the opportunity to be a classroom helper, to line up first for recess or lunch on that day, etc. On the less positive side, you may withdraw the ability to earn points for a short period of time for those students who continually disregard the rules. For example, perhaps these students lose point earning ability after receiving two warnings.

Always make sure that you frame your warning as the student's choice. (i.e., "If you choose to ____, you will choose to stop earning points for your team.") It may also be necessary to point out to the student that his teammates will not be happy about a member of the team choosing not to earn points. Most importantly, if the student shows any sign of being willing to comply, reinstate point earning privileges or immediately reward him/her with bonus points.

!!!

We stress that you Try Positive Procedures First.

!!!

Example of Correcting Disruptive Behavior

PROBLEM: A pair is arguing.

PROCEDURE:

1. Reward another pair first.

"Johnny and Anita are really working well together. They are good team members. Johnny and Anita, give yourselves 5 bonus points."

2. Correct problem.

"Carl and Joey, remember that when you argue you cannot earn points for your team. Stop arguing and continue working!"

One final point merits discussion. As indicated earlier, the tutoring game is a classroom activity that permits students to talk and interact with their classmates. Given the novelty of this learning structure, you may need to make certain adjustments initially. For example, we often hear teachers comment during their first week of the tutoring game, "It's difficult to grow accustomed to the idea of students talking" or "It sure seems strange to hear all this noise."

We generally provide two responses to these concerns. First, we **reemphasize the numerous benefits** that tutoring provides to the students in the classroom. Second, we make the point that permitting students to interact with one another during tutoring does not necessarily mean that they will expect to interact during other instructional periods of the day. You should simply inform the students that the tutoring rules are different than the rules established for non-tutoring activities. Again, the extent to which any classroom rule is followed depends upon the consequences that you provide when students follow or break the rules.

STUDENTS TAKE TOO MUCH TIME TO COMPLETE VARIOUS TASKS

Under ideal conditions, transition periods should run very smoothly with minimal delays. The length of time elapsing between activities needs to be quick or you will not be able to provide your students with important teacher-directed instruction. However, our past experience indicates that the time allotments we have specified are difficult to adhear to at first.

STUDENTS FAIL TO FOLLOW THE TUTORING PROCEDURE CORRECTLY

A third problem relates to the tutor/reader roles and procedures. Our experience indicates that some students do not follow the established procedures on a consistent basis. **If you find that a number of students are having difficulty, reteach the procedures to the entire group.** If the problems are restricted to a few students, schedule a time to reteach only those students. In all cases, we recommend the following remediation strategy:

Teach

practice

reinforce

review

You must monitor and provide bonus points for correct tutoring behaviors. You must supervise student's responding in order to achieve a successful program. If you walk around the classroom, monitoring tutoring behaviors by providing praise, giving bonus points and correction, and answering students' questions, you will reduce the number of problems.

Also, our experience indicates that some teachers enjoy their new role (as described in this manual), while other teachers are reluctant to try the peer-mediated reading procedures. We believe that the trade-off is simple; those who complete these tasks consistently and conscientiously will experience fewer problems and both you and your students will obtain greater benefits from the program.

Interestingly enough, **we have found a direct relationship between teachers experiencing problems with tutor/reader interactions and their failure to provide bonus points for the children's tutoring behavior.** Therefore, we strongly recommend that you conduct the tutoring procedures according to the guidelines described throughout this manual.

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STUDENTS CHEAT WITH RESPECT TO POINT RECORDING AND POINT SCORES

From the beginning of the program, you must insure that students use the points correctly. Monitor each session to prevent cheating. Teach the students that the number of points they earn is related to the amount of work they have completed. Monitor students' point sheets at random so that all children learn that you will be monitoring their efforts.

Watch the Team Point Chart to see if any students who have large jumps in point totals. A gain of 40 points is laudatory, but a gain of 400 points is certainly suspicious. These monitoring checks and feedback to students prevent the students from reporting unearned points. Let the students know you are on top of this situation. Do not tolerate grossly inaccurate point totals.

A FINAL THOUGHT

Of course, it is not possible to provide procedures for all problems that may arise in the course of this project. We are counting on you to use your professional judgment in handling unexpected situations. We like feedback on what types of problems arose and how you handled them. The ideas help us with future projects.

Although your first implementation will likely be awkward and hectic, you will find that after a few weeks the program will run smoothly, improve academic performance, and increase social interactions among class members.

We expect that you will find this a rewarding experience.

Good luck!

PEER-MEDIATED READING SCRIPT

Use this script to help you orchestrate peer-mediated reading. The commands for each step are written out for you.

PREPARATION: 2 minutes

1. **It's time for peer tutoring.**
   Get your materials out.
2. (optional) **Movers stand.**
3. (optional) **Movers move.**
4. **Get your materials set up. Look at me when you are ready.**

FIRST READER'S SUSTAINED ORAL READING SESSION (9 Minutes)

1. **Get ready to read for 9 minutes straight. Everybody check to make sure you are starting on the right page. Remember to read as quickly and correctly as you can.**
2. (Set timer for 9 minutes)
   Begin reading.
3. Monitor students and award bonus points.
4. After 9 minutes.
   Stop reading. Say this somewhat forcefully!

TRANSITION

1. **It's time switch jobs. First readers are now tutors. First tutors are now readers. Second readers begin reading where the first reader stopped.**
2. Set the timer for 9 minutes.
3. **Get ready to read. Begin.**

SECOND READER'S SUSTAINED ORAL READING SESSION (9 Minutes)

1. Monitor students and award bonus points.
2. After 9 minutes.
   Stop reading. Say this somewhat forcefully!

CLEAN-UP (2 minutes)

1. Award bonus points to the group for behavior of your choice.
2. **We are finished with peer tutoring today.** Circle the last **point you earned and put your materials away.**
3. (Optional) **Movers stand.**
4. (Optional) **Movers return to your seats.**

ANNOUNCING THE WINNING TEAM Last day of tutoring for the week.

1. **It's time to figure out the winning team for this week. When I call your name quickly tell me the last number circled on your score card for this week.**
2. Call on each student and write the points on the Team Assignment Chart.
3. Add up the points for each team and announce the winning team. Make this activity a BIG DEAL!
4. Write the scores of each team on the Score Board.

Appendix C

Best-Evidence Synthesis of Peer-Mediated Reading Instruction

The Efficacy of Peer Tutoring in Reading for Students with Disabilities: A Best-Evidence Synthesis

Patricia G. Mathes
Lynn S. Fuchs
George Peabody College of Vanderbilt University

Inquires should be addressed to Patricia G. Mathes, Department of Special Education, Box 328, George Peabody College of Vanderbilt University, Nashville, TN 37203. This research was supported, in part, by the U.S. Department of Education, Office of Special Education Programs (Grant #H023B0026). This information does not necessarily reflect the position or policy of the funding agency and no official endorsement by them should be inferred.

Running head: PEER TUTORING IN READING

Abstract

Peer tutoring is generally accepted as an effective instructional alternative (Gerber & Kauffman, 1981; Jenkins & Jenkins, 1985; Topping, 1988). However, the literature of its efficacy specifically in reading with students with disabilities has not been systematically integrated. This review comprehensively examines the literature on peer tutoring in reading with students with disabilities using the methodology of best-evidence synthesis (Slavin, 1986) which combines positive aspects of meta-analysis (Glass, 1976) and traditional integrative review procedures. Best-evidence synthesis reduces the number of studies included in a review to only those which meet stringent, a priori criteria. Eleven studies met the criteria set forth for this review. The results of these studies indicate that peer tutoring in reading with students with disabilities can be effective. Peer tutoring was found to have an overall effect size of .36 and was found to be more effective than the reading instruction students with disabilities typically experience. However, it was not found to be more effective than teacher-led instruction when the teacher implemented another research intervention. Many formulations of peer tutoring were described in the literature. Average effect sizes across various dimensions were very consistent; however, individual treatments evidenced variable effect sizes. Treatments in which students with disabilities were paired with normally achieving peers and

which allowed the students with disabilities to serve in the role of tutor, at least some of the time, consistently produced strong effect sizes and significant findings.

The Efficacy of Peer Tutoring in Reading for Students with Disabilities: A Best Evidence Synthesis

Peer tutoring is accepted widely as an effective tool for enhancing the academic achievement of all types of students (Cohen, Kulik, & Kulik, 1982; Delquadri, Greenwood, Whorton, Carta, & Hall, 1986; Gerber & Kauffman, 1981; Jenkins & Jenkins, 1985; Kalfus, 1984; Topping, 1988). Peer tutoring refers to an alternative teaching arrangement in which students mediate instruction for other students (Maheady, Harper, & Sacca, 1988). It occurs whenever a teacher arranges for students to be instructed by other students and represents an efficient and feasible use of available classroom resources.

Peer tutoring is not a new idea. Its history has been traced back as early as the first century A.D. to Quintilian in his Institutio Oratoria in which he described an early cross-age tutoring program (e.g., Eiserman, Shisler, & Osguthorpe, 1987). Peer-tutoring strategies were resurrected in this century within the context of the anti-poverty and compensatory education movement of the 1960's (e.g., Elliott, 1991). Since that time, peer tutoring has been acclaimed as an intervention designed to correct underachievement and improve life outcomes of children at-risk for school failure, including students with disabilities (e.g., Gerber & Kaufman, 1981). Empirical evidence to support this acclaim has been slow to accumulate; however, at the present time, a sizable body of empirical literature indicates that peer tutoring may be beneficial to underachievers and students with disabilities.

The purpose of this review is to synthesize the literature in order to determine the efficacy of peer-tutoring strategies on the reading achievement of students identified as disabled. Although other academic and social benefits of peer tutoring are recognized, they are not included in this review so that the effects of peer tutoring on reading can be separated from other domains. This review sheds light on two main questions:

1. What are the effects of peer-tutoring strategies on the reading achievement of students with disabilities?
2. Under what conditions are peer-tutoring procedures effective for students with disabilities?

Toward this end, (a) the need for peer tutoring in reading for students with disabilities is explored, (b) previous reviews on peer tutoring are examined, and (c) experimental studies investigating the effects of peer tutoring on the reading achievement of students with disabilities are reviewed systematically and integrated using the methodology of best-evidence synthesis (Slavin, 1986).

The Need for Peer Tutoring in Reading

Opportunity to Respond

It is estimated that one in three children experience significant problems in learning to read (National Commission of Excellence in Education, 1983). Of these students, a large portion qualify for special education services (Will, 1986). A major reason why many of these students do not develop adequate reading skill is that they are not afforded adequate opportunity to practice reading (Allington & McGill-Franzen, 1989; Haynes & Jenkins, 1986; Leinhardt, Zigmond, Cooley, 1981; Nagy & Anderson, 1984; O'Sullivan, Ysseldyke, Christenson, & Thurlow, 1990; Simmons, Fuchs, Fuchs, Mathes, & Pate, 1990).

A major premise of special education is that how teachers structure the learning environment makes a difference in how students spend their time, and how students spend their time affects their level of reading proficiency (Leinhardt et al., 1981, p. 357). Research on effective instruction repeatedly illustrates that students' opportunities to respond academically is a critical factor related to achievement (Brophy & Good, 1986; Greenwood, Delquadri, & Hall, 1984; Rosenshine & Stevens, 1986). The opportunity to respond is defined as "the interaction between: (a) teacher formulated instructional antecedent stimuli (the materials presented, prompts, questions asked, signals to respond, etc.), and (b) their success in establishing the academic responding desired or implied by the material" (Greenwood et al., 1984, p. 64).

The importance of opportunities to respond has been explored empirically by researchers at Juniper Garden's Children's Project of the University of Kansas. Their research suggests that the opportunities students have to respond to academic tasks is a causal and direct factor in their academic achievement: Greater opportunities to respond result in greater achievement, while few opportunities to respond result in little academic attainment (e.g., Greenwood et al., 1984). Thus, it is imperative that teachers implement strategies which structure the learning environment so that students will respond actively to academics. Peer-mediated instruction is one arrangement that structures the environment to increase students' opportunities to respond (Greenwood et al., 1984, Greenwood, Carta, & Kamps, 1990). Applications of some peer-tutoring strategies in reading have resulted in students receiving double or triple the amount of reading practice (Greenwood, Delquadri, & Carta, 1988; Greenwood, Delquadri, & Hall, 1989). For example, students' opportunities to respond in a reading period were observed to increase from 28% to 78% when peer tutoring was implemented (Elliot, Hughes, & Delquadri, 1984).

Current State of Reading Instruction

Descriptive studies indicate that the regular and special education reading instruction, as it is currently structured, does not provide an environment in which students with disabilities are afforded the necessary opportunities to practice reading to facilitate reading growth (Haynes & Jenkins, 1986; Gelzheiser & Meyers, 1991; O'Sullivan et al., 1990; Simmons et al., 1990). Observations of special education reading teachers indicate they provide less group instruction and more individual seatwork than their regular education counterparts (Allington & McGill-Franzen, 1989; Haynes & Jenkins, 1986; O'Sullivan et al., 1990). Studies indicate that special education students spend a large percentage of their time waiting, off-task, and working independently on indirect reading activities such as worksheets (Allington & McGill-Franzen, 1989; Gelzheiser & Meyers, 1991; Haynes & Jenkins, 1986; Leinhardt et al., 1981). Haynes and Jenkins (1986) found that children with disabilities sent to resource rooms for reading instruction spent 52% of their time doing worksheets and only 25% of their time actually reading.

Although the picture looks bleak for special education reading classes, time usage in regular reading classes is no better (Gelzheiser & Meyers, 1991). Low performing and mainstreamed students spend approximately two-thirds of their reading periods independent of the teacher and engaged in nonreading or indirect reading activities (Allington & McGill-Franzen, 1989; Haynes & Jenkins, 1986). Additionally, when students are being instructed directly by the teacher in reading, they spend about 70% of their time passively watching and listening to the teacher, with little or no opportunity to respond; they spend only a small fraction of time actually reading (O'Sullivan et al., 1990; Simmons et al., 1990). In one observational study, low-performing fourth graders were given less than 10 seconds of actual reading practice in a 2-week period (Delquadri et al., 1986).

Data also suggest that students most at risk for school failure may receive less reading instruction and practice than their higher-performing peers (Allington, 1984; Hall, Delquadri, Greenwood, & Thurston, 1982). Allington (1984) observed that as early as the first week of first grade, students at risk for qualifying for special education or remedial services received less reading practice and instruction. This translated into the at-risk students having the opportunity to read only 16 words of print as compared to higher achieving students being afforded the opportunity to read 1,933 words while being instructed by the same teachers. Similarly, it has been observed that at-risk first-graders averaged no more than 20 seconds of direct reading practice during a reading instructional period (Hall, Delquadri, & Harris, 1977) and that teachers spent disproportionately more time with high performers, leaving little or no time for reading instruction for low performers (Hall et al., 1982). This trend continues as the years increase, resulting in an ever-increasing gap between the reading proficiency of different ability groups (Nagy & Anderson, 1984).

The result of these differences in reading experiences has been labeled by Stanovich (1986) as the "Matthew Effect" after a verse in the bible which discusses how the rich get richer and the poor get poorer (Matthew 25:29). He comments that, "The very children who are reading well and who have good vocabularies will read more, learn more word meanings, and hence will read even better. Children with inadequate vocabularies, who read slowly and without enjoyment will read less, and as a result have slower development of vocabulary knowledge, which will inhibit further growth in reading ability" (p. 381).

Given that the children who need the most seem to receive the least, it is not surprising that estimates indicate that 20-30% of the school-age population fail to achieve when provided traditional instruction (Will, 1986). Juel (1988) conducted research indicating that the probability of remaining a poor reader at the end of fourth grade, given a child was a poor reader at the end of first grade, was .88.

In sum, it appears that students with disabilities are not afforded necessary opportunities to read and that they actually receive less instruction than their higher achieving peers. Regardless of setting, students with disabilities appear to spend a good portion of their reading instruction waiting for the teacher, engaged in indirect reading activities and noninstructional activities, and passively watching and listening to the teacher. Opportunities to respond to the teacher's instruction are few, and active engagement in the act of reading is low.

Given that opportunities to respond are essential for academic growth, interventions are necessary to increase students' opportunities to respond during reading instruction. Peer tutoring offers one instructional arrangement which has been shown to increase students' academic responding significantly (Greenwood et al., 1990; Greenwood et al., 1984; Greenwood et al., 1989). Thus, peer tutoring may represent a promising alternative to rectifying the current state of reading instruction.

Previous Reviews of Peer Tutoring

Many reviews of peer-tutoring interventions have appeared in the literature over the past 20 years. These reviews have evaluated (a) studies with general education populations exclusively (Cohen et al., 1981; Devin-Sheehan, Feldman, & Allen, 1976; Feldman, Devin-Sheehan, & Allen, 1976), (b) studies with disabled populations exclusively (Cook, Scruggs, Mastropieri, & Casto, 1985-86; Eiserman et al., 1987; Osguthorpe & Scruggs, 1986; Scruggs, Mastropieri, & Richter, 1985; Scruggs & Richter, 1985), and (c) studies on peer tutoring regardless of learner type (Gerber & Kaufman, 1981; Kalfus, 1984; Topping, 1988). Collectively, reviewers have agreed consistently that peer tutoring can be an effective instructional alternative. In the following section, the conclusions of past reviews are examined briefly.

Reviews Focusing on General Education Students

In general, reviews agree that peer tutoring is an effective technique for promoting academic gains in normally achieving and low-performing students. Additionally, there is agreement that both tutors and tutees benefit academically, but that the effects on self-esteem and social behavior are less dramatic (Cohen et al., 1982; Devin-Sheehan et al., 1976; Ellson, 1976; Feldman et al., 1976; Gerber & Kaufman, 1981; Kalfus, 1984; Topping, 1988). Ellson (1976) reported that academic gains were reported only for well structured and cognitively oriented programs. However, Kalfus (1984) concluded that unstructured programs were more effective than independent seatwork, but agreed that structured programs probably promote greater academic gain. Gerber and Kauffman (1981) noted, "In general, the results indicate that peer tutoring may be at least as effective as teacher-led instruction under certain conditions, and that peer tutoring as a supplement to teaching may be better than teaching alone" (p. 160). They point out that the use of peer tutoring represents a different allocation of existing resources, which may or may not result in better academic outcomes. They argue that peer tutoring should be used as a supplement to teacher-directed instruction and that peer-tutoring schemes need to be well planned and incorporated carefully into the ongoing instructional process. Kalfus (1984) explored the role that tutors have played and concluded that tutors can serve as successful mediators of academic instruction, reinforcing agents, and as facilitators of retention.

All of the previously discussed reviews have used traditional integrative review techniques. In contrast, Cohen et al. (1982) used the systematic methodology of meta-analysis

(Glass, McGaw, & Smith, 1981), which may be less subject to bias (e.g., Glass, 1976; Slavin, 1984). An important feature of the Cohen et al. (1982) review is that effect sizes were reported rather level of significance. The average effect size for tutee performance on academic measures was .40, while mean effect size for tutor performance on academic measures was .33. The average effect size for self-esteem measures was only .18. Thus, the effect sizes reported in this review provide support for the conclusions of previous reviews.

Unfortunately, the conclusions of the discussed reviews have not dealt specifically with disabled populations. Therefore, no generalizations about students with disabilities can be inferred, since achievement gains generally are harder to obtain for this type of learner. However, if reviews focusing on disabled populations yield similar results, greater confidence can be held that peer tutoring may be effective for all learner types.

Reviews Focusing on Special Education Populations

Reviews of peer tutoring dealing specifically with students with disabilities are limited in number. In an exhaustive search of the literature, four reviews of peer tutoring with students with disabilities were found (Cook et al., 1985-86; Osguthorpe & Scruggs, 1986; Scruggs et al., 1985; Scruggs & Richter, 1985). It should be noted that Thomas E. Scruggs was an author on each of these reviews, thus they may all reflect one specific perspective.

Handicapping condition. Two reviews on the efficacy of peer tutoring with disabled students focused on specific handicapping conditions. Using traditional review methodology, Scruggs et al. (1985) reviewed 17 studies to determine the efficacy of peer tutoring with students with behavior disorders (BD students). Only studies with an academic focus and with BD students were included, regardless of methodological adequacy. However, methodological considerations were addressed and conclusions were stated with caution. This review yielded four major conclusions. First, BD tutees invariably make academic gains. The amount of gain depends on the level of structure, the type of content, and the ability level of the tutee. Second, BD tutors gain academically when the material taught is academically appropriate for their skill levels. The reviewers conclude that tutors are likely to exhibit gain when they are tutoring in an area in which they need fluency development. Third, BD tutors and tutees appear to benefit socially from peer tutoring, as manifested by increased positive comments and initiations during tutoring time. Fourth, BD students do not appear to gain on global measures of self-esteem or social functioning.

In another review, Scruggs and Richter (1985) evaluated 24 empirical studies on the effects of tutoring interventions on the academic performance of students identified as learning disabled (LD students). Again, studies were included regardless of methodological adequacy, but methodological flaws were addressed.

Twenty studies focused on academics, but reported social data as well. Scruggs and Richter concluded that the effects of peer tutoring on LD students are equivocal. They point out that "it is not clear whether tutoring interventions are more effective than other instructional activities" (p. 285). They go on to state, "It is hard to imagine another instructional intervention in the field of learning disabilities which meets with such unqualified enthusiasm and, yet, is so lacking in empirical evidence" (p. 286). However, in their final analysis they conclude that peer tutoring may have utility for increasing the academic achievement of students with disabilities.

Reverse-role tutoring. Two reviews have focused on the effects of having handicapped students serve as tutors for their peers. Osguthorpe and Scruggs (1986) reviewed 26 studies that measured the effects of tutoring on the academic performance and social development of both tutors and tutees. Only studies in which students with disabilities served in the role of tutor were included; however, in several instances students with handicaps also served as tutees. As with Scruggs et al. (1985), this review was limited to studies with an academic focus. A unique feature was that students with LD, BD and mental retardation (MR students) were examined separately. From the research reported, Scruggs and his colleges concluded that: (a) students with LD, BD, and MR are capable of serving as tutors to both handicapped as well as normally achieving peers, (b) careful training and supervision are necessary for students with disabilities to serve successfully as tutors, (c) handicapped students experience academic growth by functioning in either tutor or tutee role, and (d) serving as a tutor does not seem to improve handicapped students' self-esteem as traditionally measured.

Cook et al. (1985-86) examined 19 studies in which handicapped students served as tutors using the methodology of meta-analysis (Glass et al., 1981). Studies in which the same students served as both tutor and tutee (i.e., reciprocal tutoring) were excluded, as were nonacademic studies. This review yielded many interesting effect sizes. The mean effect size for participating in peer tutoring was .53 for tutors and .58 for tutees. These effect sizes are larger than those reported earlier by Cohen et al. (1982) for normally achieving students. Moreover, when tutoring was used as a supplement to regular instruction, the mean tutor effect size was .96 and tutee effect size was .69. When tutoring substituted for part of the instructional time the effects for the tutor were less dramatic (ES = .63), however; the difference was negligible for the tutee (ES = .66). Specifically in reading, the average effect sizes for tutors and tutees were respectable, but less impressive (tutor ES = .30; tutee ES = .49). As reported elsewhere, the effects on self-concept were negligible (tutor ES = -.06; tutee = .12). The findings and conclusions of the Cook et al. (1985-86) review were consistent with the findings and conclusions of other reviews of peer tutoring with students with disabilities. All four reviews agree that peer tutoring holds promise as a tool for increasing the academic gains of students with disabilities.

Generalizations and unresolved issues. Across all learner types, reviews of peer tutoring yield remarkably consistent results. In general, peer tutoring is seen as an effective technique for raising the academic skills of both tutors and tutees. These conclusions are true for students with and without disabilities. Additionally, reviewers agree that self-esteem effects have not materialized.

The reviews of peer tutoring leave a number of questions unanswered. First, previous reviewers have pooled studies from several academic areas together and made generalizations about the effects of peer tutoring on all academics areas. However, there is no evidence that such pooling is warranted. In fact, Cook et al. (1985-86) computed average effect sizes for different academic areas and found the effect sizes to be very different. Unfortunately, Cook et al. (1985-86) included many studies which had serious methodological problems. The present review limited the studies included to only methodologically adequate studies. Thus, the present review yields a more accurate picture of the effects of peer tutoring on reading. Second, previous reviews have treated all tutoring treatments as equal. However, it is not clear that all variations of peer tutoring are of equal effectiveness. The present review will examine individual tutoring treatments for efficacy and identify common features which seem to be related to effectiveness. Third, peer tutoring has been espoused as a tool for facilitating mainstreaming (Gerber & Kaufman, 1981; Jenkins & Jenkins, 1985; Simmons et al., 1990). However, the impact of the setting of peer tutoring has never been explored. Thus, it is not clear if peer tutoring with disabled students in mainstream setting truly is beneficial. In this review, the impact of peer tutoring on reading achievement in mainstream classrooms and special education classrooms is investigated.

The present review represents a unique addition to the literature. It is the first review to examine comprehensively the literature on the efficacy of peer tutoring for students with disabilities in reading and the first to synthesize this literature using the methodology of best-evidence synthesis.

Method

This review uses the methodology of best-evidence synthesis described by Slavin (1986) for integrating research findings from a body of literature. This methodology incorporates features of both meta-analysis (Glass, 1976) and traditional integrative review procedures. It was developed to draw on the strengths, while avoiding the weaknesses, of both meta-analysis and traditional narrative review (Slavin, 1986).

Best-evidence synthesis has several characteristics that differentiate it from meta-analysis and traditional narrative review. First, studies are selected carefully as representing the "best evidence" on a given topic through the consistent application of clearly stated, defensible, a priori criteria. Criteria are selected to ensure that all studies included for analysis meet standards of germaneness to the topic and methodological adequacy of the research. Although only selected studies actually are included for analysis, it is incumbent on the researcher to conduct an exhaustive search of the literature to find every study relevant to the topic under examination.

Second, best-evidence synthesis uses both effect size and statistical significance to determine where the weight of the evidence lies. Studies that meet inclusion criteria, but for which effect size cannot be computed, are included in the review with an indication of the level and direction of statistical significance (Slavin, 1986).

Third, effect sizes are used carefully in a best-evidence synthesis. Unlike meta-analysis, average effect sizes are not the primary outcome. Instead, they are presented only as adjuncts to the literature review. Additionally, averaging of effect sizes is conducted only for categories of dependent measures where it is logical to aggregate

Fourth, the primary emphasis of best-evidence synthesis is the literature review (Slavin 1986). In this section, the reviewer summarizes the findings of each study and makes conclusions about the topic (Slavin, 1986). Additionally, methodological and substantiative issues of individual studies are discussed.

The "Method" section of this best-evidence synthesis outlines the procedures used in conducting the review and integrating the findings. It delineates (a) how studies were located, (b) what criteria were used for selecting studies, (c) how effect sizes were computed, (d) how studies were coded and categorized, and (e) how averaging of effect sizes was handled.

Literature Search

The first step in conducting this best-evidence synthesis was to conduct an exhaustive search of the literature to locate as complete a set of studies on peer tutoring in reading with students with disabilities as possible (Glass et al., 1981; Light & Pillemer, 1984; Slavin, 1986). This search proceeded through five stages. First, multiple descriptors were generated from key topic-related terms using the Thesaurus of ERIC Descriptors, 12th Edition (Educational Resources Information Center, 1990). The terms generated were peer tutoring, peer teaching, cross-age tutoring, peer-mediated instruction, dyad reading, and paired reading.

Second, these terms were used to facilitate a computer search of two on-line data bases: (a) ERIC, a database on educational materials from the Educational Resources Information Center, consisting of the files Research in Education and Current

Index of Journals in Education; and (b) *Comprehensive Dissertation Abstracts*. The *ERIC* database was searched from April 1991 back to 1966 and the *Comprehensive Dissertations Abstracts* database was searched from April, 1991 to 1861. The descriptors initially were entered into the computer as isolated phrases to promote a wider search (e.g., Dusek & Joseph, 1983). However, for the descriptors "peer tutoring" and "peer teaching," this procedure yielded hundreds of citations. Thus, these two descriptors were restricted by including the requirement that the citation also relate to reading.

Third, a manual search was conducted of pertinent journals from 1980 to April 1991. Journals searched were: *American Educational Research Journal*, *Education and Training in Mental Retardation*, *Education and Treatment of Children*, *Exceptional Children*, *Focus on Exceptional Children*, *Learning Disability Quarterly*, *Remedial and Special Education*, *Journal of Educational Psychology*, *Journal of Learning Disabilities*, *The Journal of Special Education*, and *Reading Research Quarterly*.

Fourth, the reference section of all articles collected from the previous three stages were examined for other relevant references. Last, researchers who either had been involved with peer-tutoring research in the past or who were involved presently with peer tutoring research were telephoned and asked if they had any unpublished technical reports, unpublished manuscripts, or in press manuscripts which were not yet available which should be represented in this review. Contacted researchers were Joseph Jenkins at the University of Washington, Thomas Scruggs at Purdue University, Paul Sindelar at the University of Florida, Deborah Kamps at the University of Kansas - Juniper Gardens Children's Project, and Joseph Delquadri also at the University of Kansas - Juniper Gardens Children's Project.

This search yielded over 130 articles related to peer tutoring in reading. Additionally, multiple reviews and meta-analyses related to peer tutoring both with regular and special education populations were located. All citations were examined and all studies which incorporated reading treatments with low-achieving readers (n = 44) were reviewed further. In keeping with the focus of this review, only studies with populations of disabled learners were maintained in the final review. Moreover, in keeping with best-evidence synthesis methodology, only studies which used group designs were maintained in the final review and coding process (n = 30).

Criteria for Study Inclusion

In keeping with best-evidence synthesis methodology, the studies on which this review is based had to meet a set of a priori criteria with respect to germaneness and methodological adequacy.

Germaneness. To be germane to the review, all studies had to evaluate peer-tutoring treatments designed to address reading deficits of students identified as LD, MR, or BD. Peer tutoring was operationalized as an instructional arrangement in which school-age students are taught by other school-age students on a one-to-one basis. To be included, studies had to have the following characteristics.

1. The peer-tutoring treatments had to be carried out by school-age students in grades 1 - 12. Teacher involvement could include initial training and monitoring throughout the study. Studies examining tutoring by parents, paraprofessionals, or other adults were excluded.

2. Although the study did not have to focus solely on special education students, the number of participants with disabilities had to be delineated clearly and the effects of peer tutoring on students with disabilities had to be determined separately from effects on nonhandicapped students. This criterion excluded several studies (e.g., Azcoitia, 1989; Brown, 1971; Greenwood, Delquadri, & Hall, 1989; Melberg, 1981; Slavin, 1980; Strother, 1984).

3. The study had to have been conducted in schools during the regular school day rather than in laboratory settings.

4. Study duration must have been at least 6 weeks or a total of 18 sessions; thus, ensuring that the peer-tutoring procedures were employed in schools for extended periods. Only one study was excluded because it did not meet this criterion (e.g., Jenkins, Mayhall, Peschka, & Jenkins, 1974).

5. Peer-tutoring sessions must have been carried out at

least 2 times per week for at least 10 minutes a session; thus ensuring that procedures were part of a regularly occurring classroom activity.

6. The role of the students with disabilities must have been stated explicitly. Studies were included regardless of the role of the special education student; however, their role during tutoring was coded for further analysis.

7. Peer tutoring in reading had to be the principal intervention. Studies in which students were involved in multiple treatments were excluded.

Methodological adequacy. Criteria for methodological adequacy were as follows.

1. The study must have included a control group to evaluate the effects of peer tutoring on reading achievement. This criterion was part of the initial screening of studies; however, two studies had to be examined more closely to determine that no control group was present for the handicapped population (e.g., Eiserman, 1988; Maher, 1986).

2. Evidence of initial equivalence on pretest measures between experimental and control grouped must have been demonstrated. If groups were not initially equivalent, then the degree of nonequivalence must have been quantified or statistically adjusted. Examples of studies excluded based on this criterion are Epstein (1978) and Lombardo (1975).

3. In nested designs in which whole classes or schools were

assigned to treatments, there must have been at least two teachers or schools assigned to each treatment group. If the design was not nested, then subjects must have been assigned randomly to comparison groups. Thus, possible confounds of teacher or school effects were controlled. This criterion excluded Jenkins, Jewell, and Leceister (in press) and Shisler, Top, and Osguthorpe (1986).

4. Dependent measures must have been reported for reading achievement. Although studies may have included other measures such as attitudinal or social skills data, reading achievement must have been reported. This criterion was used to initially screen studies.

5. Reading dependent measures directly tied to the reading peer-tutoring process were permitted only when the control group also followed a curriculum tied to the dependent measures. Otherwise dependent measures had to be more global. This criterion excluded the Maher (1982) study, which used grades received during tutoring as the dependent measure.

It should be noted that almost all studies excluded from this review were excluded on the basis of more than one criterion. A list of excluded studies and reasons for their exclusion can be found in Appendix A.

Computation of Effect Size

Effect sizes were computed for each study to determine the size and direction of effects of peer tutoring in reading on the reading achievement of students with disabilities. In general, effect sizes were computed using procedures explicated for meta-analysis by Glass et al. (1981), Hedges (1981, 1982), and Hedges and Olkin (1983) As described by Glass et al., (1981), effect size is defined as the difference between the mean final status scores of the experimental group and control group divided by the standard deviation of the control group. The basic effect size formula was adapted as recommended by Hedges (1981) to yield an unbiased estimate of the underlying population effect when sample sizes are small. In this review, it was possible to compute effect sizes for each study that met inclusion requirements.

The specific formula used to determine each individual effect sizes was determined based on the information available in each study. The formula used to determine effect size based on final status scores was:

$$\frac{X_e - X_c}{SD \text{ pooled}}$$

The pooled standard deviation was defined as:

$$\frac{\sqrt{[(N_e - 1)S^2 + (N_c - 1)S^2]}}{N_e + N_c - 2}$$

Effect sizes were determined using the recommended final status scores only when there was evidence that the experimental and control group scores were equivalent at pretest. When they were not initially equivalent other procedures were followed as recommended by Glass et al. (1981) and Hedges and Olkin (1983).

When analysis of covariance was conducted, effect size was determined using the following formula:

$$\frac{(\text{Regressed adjusted}_e - \text{Regressed adjusted}_c)}{\sqrt{[MS_w\ (df_w - 1) \div (1 - r^2xy)\ (df_w - 2)]}}$$

Because the correlation between the experimental and control group was rarely available, it was estimated to be .80 when not provided. However, in Simmons et al.(1990) and Simmons, Fuchs, Fuchs, Pate, and Mathes (1991) the actual correlations were available and thus used.

In some cases, gain scores were presented for analysis. In these cases, effect sizes was determined in the following manner:

$$X_{e\ diff} - X_{c\ diff} / SD_{gain} \sqrt{(1 - rxy)}$$

In some cases, final status scores were not statistically different at pretest, but examination of the scores indicated that the final status scores were practically different. In these cases, the effect size was determined using gain scores to better represent the magnitude of the effect.

In a few studies, _t_ tests were reported for gain scores while the standard deviation of the gain scores was not reported. In these cases, effect size was estimated based on _t_-tests based on gain scores. The procedure used was:

$$\underline{t}_{gain} \sqrt{[2(1 - rxy)\ (1/n_e + 1/n_c)]}$$

In some instances, the effect size had to be determined from the _F_ score as recommended by Glass et al. (1981). In these cases the effect size was determined using the following formula:

$$2 \sqrt{\left[\frac{F\ (1 - r^2xy)\ (df_w - 1)}{(n_e + n_c)\ (df_w - 2)}\right]}$$

Coding Studies

Studies were reviewed to (a) determine if they met inclusion criteria and (b) code specific features of the studies. A coding form was developed (see Appendix B). All studies were coded by the author. Reliability of the coding process was checked by having a second coder code 10 of the 30 studies included in the final review. Intercoder reliability was determined using the following formula: Percentage agreement = $\frac{\text{agreements}}{\text{agreements + disagreements}}$. In cases of disagreement, discussion occurred until 100% agreement was achieved. Reliability across categories ranged from 80% to 100% with an overall average agreement of 97% (see Table 1).

Insert Table 1 about here

Beyond basic inclusion criteria, studies were coded for: type of subject disability; number of subjects with each handicap; type of reading taught during peer tutoring (i.e., phonics, sight words, decoding, fluency, comprehension, or mixed); setting in which tutoring occurred; type of tutoring (i.e., classwide, individual, cross-age, same age, expert, or reciprocal); role of the handicapped subjects (i.e., tutor, tutee, or both); structure of the tutoring procedures (i.e., structured or nonstructured); type of reinforcement system; dependent measures and their proximity to the type of tutoring conducted; and location of tutoring (i.e., mainstream or special education). The coding scheme and percentage of agreement (before resolution of disagreements) is presented in Table 1.

Averaging of Effect Sizes

In keeping with best-evidence synthesis methodology, averaging effect sizes was done only when logical. Because this best-evidence synthesis restricted the range of studies to include only those of peer tutoring in reading with students with disabilities, pooling across a variety of characteristics was logical. First, an average effect size for all reading measures and all learner types was calculated. Additionally, effect sizes were pooled to determine the average effect sizes of: (a) role of the student with a disability (i.e., tutor, tutee, or reciprocal); (b) age difference between tutor and tutee (i.e., cross-age or peer); (c) type of reading activity tutored; (d) classroom arrangement (i.e., classwide or individual pairs); (e) location of tutoring (i.e., mainstream classrooms or special education classrooms; (f) prerequisite tutor skill (i.e., expert or reciprocal); and (g) proximity of the dependent measures to the reading content covered during tutoring. The results of pooling are presented in Table 2.

Results

Eleven studies examining peer tutoring in reading with students with disabilities met the inclusion criteria discussed earlier. These 11 studies yielded a total of 74 effect sizes. Table 2 summarizes the aggregated data for major characteristics of these studies.

Patterns in the Data

Table 2 indicates that the average effects of peer tutoring in reading with students with disabilities, for the most part, were respectable. The average unbiased effect size across all 11 studies was .36, with effect sizes ranging from .07 to .75. This unbiased effect size increased to .40 when calculated from studies comparing peer tutoring to teacher-led instructional control classrooms in which teachers provided reading instruction without any intervention from research staff (i.e., no-treatment control). However, when comparing peer tutoring to teacher-led treatment groups in which teachers implemented a specific reading intervention under examination by the researcher, the effect size decreased to a negligible .14. This indicates that peer tutoring (a) has a greater effect on reading achievement than reading instruction typically implemented by teachers with students identified as disabled and (b) is equally effective to other researcher-guided interventions which are implemented by the teacher. A tenable conclusion is that peer tutoring is as effective as teacher-led instruction, and can be even more effective than teacher-led instruction, depending on the quality of that teacher-led instruction and the tutoring treatment.

Insert Table 2 about here

As can be seen from Table 2, the average effect sizes for the various characteristics generally are consistent; most characteristics have an effect size close to the overall effect size of .36. Additionally, the average effect sizes for all characteristics (excluding comparisons to teacher-led instructional control, i.e., no-treatment control, groups) are significantly different from zero ($\underline{p} < .01$).

Looking at the results of the pooled effect sizes for specific study characteristics, it would seem that different formulations of peer tutoring are about equally effective. For instance, cross-age tutoring appears equally effective as same-age peer tutoring. This appears to be the case for the tutors' academic knowledge level as well, with effects being approximately equal when the tutor has expert or similar knowledge. Interestingly, treatments with a decoding focus and treatments with a more holistic, multiple focus also appear equally effective.

The setting in which tutoring occurs appears to make a difference. Tutoring treatments conducted in general education appear to have stronger effects than those occurring in special education classrooms. However, it must be noted that subjects in these studies were not assigned randomly to setting. In two of four studies in which tutoring occurred in the mainstream, students with disabilities in the tutoring treatment were already mainstreamed (Simmons et al., 1990; Simmons et al., 1991).

Importantly, these two studies account for 26 of 33 effect sizes pooled for this characteristic. Having only previously mainstreamed subjects is problematic because the average effect size for tutoring in the mainstream may reflect the effect of peer tutoring on more capable learners rather the effect of setting. This is because students with disabilities, who have been previously mainstreamed, may represent a more capable group of learners than students with disabilities who have not been mainstreamed (e.g., Slavin, 1984). Thus, at the present time, it is not clear if setting has a true effect on the strength of peer tutoring in reading with students with disabilities.

A last factor which appears important is the role students with disabilities play during tutoring. From the results of the pooling, it appears that handicapped students make greater gains when they serve as tutors. However, caution is warranted in interpreting this finding. First, tutors were not selected randomly in any study reviewed. In several studies, they were selected because their knowledge on the skills to be tutored was greater than tutees (Carlton, Litton, & Zinkgraf, 1985; Lamport, 1982). Thus, they represented a more capable group of learners who could be expected to benefit more from intervention. Additionally, this finding is biased by one treatment package (i.e., Beginning Decoding) developed by researchers at Brigham Young University and Utah State University. This curriculum was used in three of five studies in which students with disabilities served as tutors (Scruggs & Osguthorpe, 1986; Top & Osguthorpe, 1985; Top & Osguthorpe, 1987). Thus, no generalizations should be made.

While pooling based on studies characteristics yielded similar results, the average effect sizes of individual studies were not similar. Table 3 presents the major characteristics of each study and presents the average effect size for each treatment. Some treatments produced strong effect sizes, while others yielded negligible results. In the following section, the individual studies are examined and reasons for treatment differences explored.

Insert Table 3 about here

Review of Individual Studies

Studies comparing similar treatments delivered by peer tutors and teachers. Three studies compared reading interventions which were delivered by peers and by teachers. In these studies, the instructional activities and the amount of instructional time were comparable for both tutoring and teacher-led groups (McCracken, 1979; Sindelar, 1982; Russell & Ford, 1983). Thus, these three studies represent a class of studies distinct from the rest. They examined whether a similar treatment is more or less effective when delivered by peers or when delivered by teachers.

McCracken (1979) compared peer tutoring provided by LD students to one-on-one teacher tutoring using the same procedures for teaching sight words to students identified as LD and EMR in special education resource rooms. Of the 11 studies included, this study is the only one to compare peer tutoring to teacher-led, one-on-one tutoring using the same intervention. Additionally, because the peer tutors were identified as LD, it provides an interesting test for examining the feasibility of implementing peer tutoring in resource rooms, with students with disabilities serving as tutors as well as tutees.

The treatment examined by McCracken (1979) consisted of teachers or tutors teaching sight words found on the Slosson Oral Reading Test (SORT) (Slosson, 1963) and then testing word recognition on this same test. Both groups provided one-to-one instruction. Obviously, a serious flaw of this study was that the dependent measures were linked directly to the treatments. However, because both groups taught the same curriculum, effect sizes could be calculated. The reported average effect size of .08 reflects the comparison of the peer-tutored group (tutee scores) to the teacher-tutored group based on the SORT tutee scores and indicates that the two conditions were equally effective. The effect size for each comparison is presented in Table 4. Tests of statistical significance indicated no differences between the teacher-tutored and the peer-tutored tutees on word recognition (t =.61, p =.54) or comprehension (t

$= .28$, $p = .78$). Data for the handicapped tutors were not presented.

The McCracken (1979) study also presented comparisons to a no-treatment control group. However, effect sizes were not computed for this control group because the dependent measures were linked to the treatments. As would be expected, both the teacher-tutored and the peer-tutored groups performed significantly better on posttest measures than the control group which did not receive instruction on SORT sight words ($t = 7.98$, $p < .0001$).

The McCracken study had two major flaws which should lead to cautious interpretation of the results. First, because the dependent measures were linked to the treatments, it is not possible to ascertain whether the treatments promoted general reading ability as indexed by other measures. Secondly, the statistical analyses presented for determining statistical significance were flawed. In order to control for initial pretest differences, McCracken ran a series of t tests for every comparison, rather than using multivariate analysis of covariance; thus, increasing the likelihood of Type 1 error (Glass & Hopkins, 1984). For the purposes of the present review, tests for statistical significance were not used, and effect sizes were calculated based on pretest/posttest gains.

Of major importance to the present review, this study provides evidence that learning disabled peers can be as effective in providing instruction to their learning disabled classmates as teachers under the same conditions of one-to-one instruction. This study represents the only evidence in the literature that handicapped peers can be as effective as teachers in providing an equivalent instructional intervention. However, it must be recognized that the treatments were highly structured and relatively simple; thus, no generalizations can be made about the ability of handicapped peers to tutor other handicapped peers under other, more complex conditions.

Insert Table 4 about here

Sindelar (1982) presents a study in which peer tutoring with LD students was compared to teacher-directed, small-group instruction utilizing similar procedures. This study differs from the McCracken study in three important ways: a) the tutors were general education students, b) the teacher delivered the treatment to a group of six students, and c) three tutoring treatments were compared to one teacher-led treatment. The teacher-led treatment was similar to one of the tutoring treatments. The study's average effect size of .07 indicates that the peer tutoring provided by students without disabilities produced similar effects as a teacher-directed, small-group intervention.

In this particular study, teachers were assigned randomly to one of four treatment groups: (a) a hypothesis/test (H/T) peer-tutoring group, (b) a sight-word peer-tutoring group, (c) a sustained oral reading practice tutoring group, and (d) a H/T teacher-directed small group instruction group. The tutors were recruited from regular education classes to tutor their handicapped peers in special education resource rooms. The treatments were based on previous work by Samuels, Dahl, and Archwatemy (1974) which found the H/T method superior to repeated reading and word recognition drill when conducted by the teacher. However, Sindelar (1982) extended the research by implementing the treatments with peers.

It must be noted that the H/T procedure had already been validated as an effective technique when used as a teacher-directed method. Thus, it is reassuring that Sindelar found that peers could conduct this procedure as well as teachers. Additionally, findings indicated that the H/T tutorial group had significantly superior performance to the word recognition tutorial group ($t = 2.92$, $p < .005$). This finding suggests that more complex treatments may be superior to simple sight-word treatments; however, the question of treatment complexity has not been addressed empirically.

Russell and Ford (1983) presented another study comparing peer tutoring conducted by general education peers to similar procedures conducted by teachers to a small group of students. This study is distinct from the Sindelar (1982) and the McCracken

(1979) study in two important ways. First, the focus of the tutoring intervention was more complex and focused on decoding, fluency, and comprehension. Second, the tutoring treatment was patterned after the traditional Directed Reading Activity (DRA) consisting of three phases: preparation for reading, guided reading of a selection, and follow-up activities (Harris & Sipay, 1985). The teachers in the teacher-led group had previously taught reading following this format. Rather than requiring these teachers to implement a different instructional intervention, they continued conducting reading as they normally had. Thus, this study examined whether peer-tutoring was more effective than teacher-led small group instruction when both groups provided reading instruction similar to instruction typically implemented by teachers.

The focus of this study was EMR students. Both tutoring and teacher-led students were assigned to the same classrooms and were assigned randomly to treatments. Both groups conducted daily hour-long sessions for a 3-month period. The lessons included 20 minutes of word introduction and review; 15 minutes of oral reading and drill on word attack skills; 10 minutes of worksheets; and 15 minutes of grading work, recording grades, and charting daily progress. Students in the tutoring condition received all of their reading instruction from their tutors; thus, this treatment totally replaced teacher-led instruction.

The results of this study were impressive; the average effect size of .75 was the largest obtained for any study in this review. Reading growth was measured using the Peabody Individual Achievement Test (PIAT) reading scales (Dunn & Markward, 1970). The EMR students who were tutored by their general education peers made significantly greater reading growth on both reading recognition (*t* =3.21, p < .05, ES = .52) and comprehension (*t* = 2.16, *p* < .05, ES = 1.00). This study provides evidence that peer tutors can be *more* effective than teachers providing small group instruction when the instructional activities are very similar and instructional time is held constant.

Comparisons of peer tutoring to a no-treatment control group: Treatments that focused on decoding. Four studies focused on decoding using a highly structured decoding program modified from *Beginning Reading*, a curriculum originally designed to be used by parents or paraprofessionals (Harrison, 1982). In each of these studies, the tutoring treatment group was compared to a control group of students receiving small group, teacher-led instruction from special education teachers, without any intervention from the researchers.

The first two studies examined the efficacy of peer tutoring when students with disabilities tutored other students with disabilities in special education resource rooms. Both were reported by Scruggs and Osguthorpe (1986). A more detailed version of both studies was located in an ERIC document (Osguthorpe, Eiserman, Shisler, Top,& Scruggs, 1984).

The first study reported by Scruggs and Osguthorpe (1986) examined the effect of cross-age tutoring; older elementary LD and BD students served as tutors for LD and BD students in lower grades. Tutors were paired with tutees who had less knowledge of the material to be tutored. Tutoring occurred in special education resource rooms; special education teachers paired the tutors and tutees, but researchers supervised the peer-tutoring sessions. The control students received instruction in the same experimental classrooms from the same teachers.

Dependent measures included a criterion-referenced test of decoding skills (Harrison, 1982) and the Woodcock-Johnson Psycho-educational Battery (WJPB) reading subtests comprised of letter-word identification, word-attack, and passage comprehension subtests (Woodcock & Johnson, 1977). The Criterion-referenced test of decoding skills was not linked directly to the treatment; however, it was more closely matched to the tutoring treatment than the WJPB. Thus, it is not surprising that statistical significance based on gain scores was found on all criterion-referenced test measures for tutees in favor of the tutorial group ($p < .05$). However, this was not replicated with the tutors ($p > .05$) On the WJPB, statistical significance was found for only the word attack subtest for both tutors and tutees ($p < .01$).

Despite finding of statistical significance, the overall effect size for this study was a negligible .07. There are two reasons why this study produced a weak overall effect size. First, statistically significant comparisons had borderline effect sizes due to large control group standard deviations on gain scores, which were used to calculate effect size (WJPB word attack for tutee ES = .20, for tutors ES = .22; Criterion-referenced Decoding for tutees ES = .31). Second, the effect sizes calculated on nonsignificant measures were all below .15 (see Table 4).

The results of this study provide weak evidence that having older students with disabilities tutor younger students with disabilities is academically beneficial to both tutors and tutees with disabilities. However, it does appear that tutees did make reasonable gain on decoding skills. Unfortunately, transfer to other areas of reading was not evidenced. Thus, it is not clear if the treatment itself was inadequate, if cross-age tutoring was not beneficial, or if having students with disabilities serve as tutors for other students with disabilities was ineffective.

The second study reported by Scruggs and Osguthorpe (1986) was similar in design and treatment to the first study. Again the Beginning Reading curriculum was used (Harrison, 1982). However, this study examined reciprocal peer tutoring. LD and BD students were paired with other LD and BD students who had similar decoding skills. One student served as the tutor for half of each session, then the students reversed roles and the second student served as the tutor. Tutoring occurred in special education classrooms. An important dimension was that students received training on to-be-tutored skills from the teacher or aide before tutoring sessions. Thus, students received both teacher-directed instruction and peer instruction on the content of the tutoring program. Additionally, pairs were supervised by the researchers during each session .

The average effect size obtained in this study was stronger (ES = .23) than in the cross-age tutoring study (ES = .07), even though the actual tutoring curriculum was the same (Harrison, 1982). However, the average effect size of .23 was still not reliably different from zero. As in the first study, dependent measures included a criterion-referenced test of decoding skills (Harrison, 1982) and the Woodcock-Johnson Psycho-educational Battery (WJPB) reading subtests comprised of letter-word identification, word-attack, and passage comprehension subtests (Woodcock & Johnson, 1977).

Results were similar to the cross-age tutoring study. Statistical significance was demonstrated for gain scores on all criterion-referenced decoding test measures ($p < .003$) and for the WJPB word-attack subtest ($p < .01$). Results on other WJPB subtest measures were not significant. The borderline average effect size of .23 reflects a combination of weak effect sizes on the WJPB reading subtests and respectable effect sizes on the criterion-referenced decoding test (see Table 4).

As in the cross-age study, results of this study are equivocal. Based on this and the first Scruggs and Osguthorpe study (1986), no conclusions can be drawn about the efficacy of peer tutoring in reading with students with disabilities when the tutoring pair consists of two students with disabilities.

Two other studies (Top & Osguthorpe, 1985; Top & Osguthorpe, 1987) made use of the modified Beginning Reading curriculum (Harrison, 1982). The effects achieved in the Top and Osguthorpe studies were greater than those reported by Scruggs and Osguthorpe (1986), even though the research design, treatment duration, tutoring procedures, and frequency were similar in all four studies. However, the two Top and Osguthorpe studies were conducted with both special and general education students working together, while the two Scruggs and Osguthorpe (1986) studies involved only students with disabilities in the tutoring treatment. Thus, providing evidence that peer tutoring in reading with students with disabilities may be more effective when conducted with general education students and disabled students working together.

The Top and Osguthorpe (1987) study actually was conducted before the Top and Osguthorpe (1985) study. Earlier and more detailed versions of the Top and Osguthorpe (1987) report were found in dissertations abstracts (Top, 1984) and an ERIC document (Osguthorpe, Eiserman, Shisler, Top, & Scruggs, 1985). This study examined the effects of reverse-role tutoring in which LD and BD students tutored younger general education students in basic decoding skills. The tutoring sessions occurred in general education classes and were supervised by instructional aides trained in the procedures. The disabled tutors were in the fourth through the sixth grades, while the general education tutees were all first graders.

A design strength of this study was that students in the tutoring condition and control condition received equivalent amounts of reading instructional time; thus, additional instructional time for the tutoring group was not an issue. Both tutors and tutees were measured for reading growth, and results indicated that both groups made significant reading growth. However, only measures gathered on the disabled tutors are reported in this review.

The average effect size for this study was .48. This effect size reflects only the WJPB (Woodcock & Johnson, 1977) comprised of letter-word identification, word-attack, and passage comprehension subtests. The criterion-referenced decoding test (Harrison, 1982) was reported only for the first grade tutees. The fact that the effect size reflects only WJPB scores is noteworthy, since previous reports using the same curriculum yielded negligible effects on the same measures. As in Scruggs and Osguthorpe (1986), the greatest gain was evidenced on the word attack subtest ($\underline{F}$ =49.75, $\underline{p}$ < .01, ES =.96); a logical result since the treatment focused primarily on word attack skills. WJPB passage comprehension also was significantly greater for the tutor group ($F = 8.99$, $p = .01$, ES = .41), as was the WJPB Total Reading score ($F = 17.79$, $p < .01$, ES = .58). Thus, it appears that the decoding skills transferred to other areas of reading not directly taught during tutoring.

Top and Osguthorpe (1985) essentially replicated their earlier study. Again, LD and BD middle-school students served as tutors for students in primary, general-education classrooms. The general education students included both kindergarten and first grade students. Again, instructional time was held constant across conditions and the curriculum used during tutoring was a modified version of Beginning Reading (Harrison, 1982). However, a major difference of the 1985 study was that the BD students conducted the tutoring sessions in special education classrooms, while the LD students conducted tutoring in general education classrooms. Thus, results for LD and BD students are reported separately.

Results indicated that both groups of tutors benefited from tutoring younger general education students and that the general education students also made significant reading achievement gains. The average effect size for the study was .63. This reflects LD, BD, and LD/BD student scores on the WJPB (Woodcock & Johnson, 1977) reading subtests. All measures significantly favored the students who served as cross-age tutors for normally achieving students ($p < .01$) (see Table 4).

The results of this second study are striking considering that the curriculum and basic procedures were essentially the same as those reported by Scruggs and Osguthorpe (1986). Given the disparity in results between the two Scruggs and Osguthorpe (1986) studies and the two Top and Osguthorpe (1985, 1987) studies, it appears that the Beginning Reading curriculum may be best suited for cross-age tutoring, with handicapped students tutoring general education students rather than other special education students. Additionally, the two Top studies demonstrate that students with disabilities can serve effectively, under controlled conditions, as tutors for younger general education students and that this inverse role can be beneficial for the students with disabilities.

A last study examining the effects of a peer tutoring decoding treatment on the reading achievement of students with disabilities was Carlton et al. (1985). A more detailed version of this study was located from Dissertation Abstracts (Carlton, 1981). This study is unique because EMR students served as tutors for EMR tutees and the treatment was conducted with entire classes at the same time (i.e., classwide). This study is the only study in the literature in which EMR students served as tutors.

The treatment presented in the Carlton study is similar to the treatment described by McCracken (1979), in which sight words were taught. The sight words taught in the Carlton study were listed in the Brigance Inventory of Basic Skills (Brigance, 1977) and presented for 6 weeks. Tutee and tutor roles were determined by administering a sight word inventory and assigning the lower scoring half of each class to the tutee condition and the higher half to the tutor condition. Subjects were assigned randomly to either the tutoring condition or to a teacher-led, no-treatment control in which teachers taught reading using their typical method.

Results of this study are impressive when one considers the simplicity of the treatment. Subjects in the tutoring condition demonstrated significantly greater gains on all measures of the Gates-McGinitie (MacGinitie, 1978). This was true for tutors and tutees. Perhaps most impressive is the finding that significant comprehension gains were evidenced ($F = 3.30$, $p < .05$). The average effect size calculated for this study was a respectable .38. The effect sizes for tutee and tutor role were essentially the same (see Table 4).

It must be recognized that this study had one serious flaw which should lead to cautious interpretation of results. It appears that the tutoring group received more overall instructional time in reading. Thus, it cannot be concluded that the tutoring treatment alone was responsible for results. However, a design strength was that the dependent measures were not related to the treatment, as they were measures of general reading ability.

Comparisons of peer tutoring to teacher-led, no-treatment control: Treatments with a multiple focus. The last three studies which met inclusion criteria focused the peer tutoring treatment on both reading fluency and comprehension (Lamport, 1982; Simmons et al., 1990, 1991). Lamport (1982) presented a cross-age tutoring study similar in design to the cross-age tutoring study reported by Scruggs and Osguthorpe (1986). Sixth-grade students identified as LD tutored second- through fourth-grade LD students. As in Scruggs and Osguthorpe (1986), students in the tutoring group and students in the control group were assigned to the same teachers. Students in each group were matched according to pretest performance on the Stanford Diagnostic Reading Test (Karlsen, Madden, & Gardner, 1977) so that there was a matched control group for both tutors and tutees.

The tutoring treatment occurred in special education resource classrooms and was similar to the treatment described by Russell and Ford (1983). However, the students with disabilities served as tutors of their disabled peers. Each session lasted 55 minutes twice a week for 8 weeks and consisted of the following sequence: (a) word study, (b) oral reading of a selection, (c) discussion of the selection, (d) skills activities, and (e) record keeping activities. Thus, the tutoring treatment followed a sequence similar to the traditional DRA lesson (Harris & Sipay, 1985). Unfortunately, it could not be determined from the manuscript what reading instruction was like in the control condition. Thus, it could not be assumed that control students received teacher-led instruction following a similar DRA format.

The average effect size for the Lamport study was .44 on Stanford Diagnostic Reading Test (SDRT) measures (Karlsen et al., 1977). Tutors significantly outperformed controls on the phonetic analysis subtest (F = 5.43,p =.03, ES = 1.04) and on the auditory vocabulary subtest (F = 5.60, p =.03, ES = .69). No other SDRT subtest scores were statistically significant. Even so, respectable effect sizes were obtained for the tutees' performance on the phonetic analysis (ES = .33) and comprehension (ES = .29) subtests, indicating that this particular treatment had favorable effects for both the tutee and tutor groups (see Table 4).

The results of the Lamport (1982) are similar to those reported by Russell and Ford (1983), which made use of a similar treatment. These two studies present evidence that the traditional DRA reading lesson sequence can be utilized effectively as a peer tutoring treatment. Additionally, this study provides evidence that students with disabilities can serve effectively as tutors for younger students with disabilities, even when the tutoring procedures are relatively complex. This finding lends support to the equivocal findings of Scruggs and Osguthorpe (1986) and provides evidence that students with disabilities can serve as tutors in resource rooms, even when the tutoring procedures are complex, an issue left unanswered by

Carlton et al. (1985). It may be that the effects for the tutors with disabilities were better in this study than in the Scruggs and Osguthorpe (1986) study due to the nature of the treatment. The wider focus of the tutoring treatment of the Lamport study may have represented a better match to the needs of the tutor, while the Scruggs and Osguthorpe's (1986) focus on decoding may not have been an appropriate match.

The final two studies of this review (Simmons et al., 1990, 1991) were conducted by a team of researchers at George Peabody College at Vanderbilt University of which the author was a member. These studies both examined treatments implemented in the mainstream, by mainstream teachers as part of efforts to modify mainstream reading instruction to accommodate the needs of students with mild disabilities.

In Simmons et al. (1990), experimental teachers implemented an instructional model based on teacher effectiveness literature during their daily teacher-directed reading instruction. In half of these classrooms peer tutoring occurred 3 days per week for 8 weeks as a supplement to the teacher-effectiveness model. Tutors were selected by the teachers from among higher performing students in the same general education classroom.

The treatment consisted of two components: (a) fluency development based on repeated reading (O'Shea, Sindelar, & O'Shea, 1987; Samuels, 1987) and (b) comprehension development utilizing paragraph restatement (Jenkins, Heliotis, Haynes, & Beck, 1987). Tutoring occurred 3 times per week for 20 minutes each session. Unfortunately, teachers had little involvement with the tutoring treatment. Tutors and tutees were trained and supervised by research staff, and the tutoring sessions were conducted away from teachers (usually in the hall, outside the teachers' classrooms) while they worked with other students. Importantly, tutoring replaced independent seatwork time; thus, tutoring did not represent an addition to the overall instructional time allotted to reading instruction. Rather it represented only a different use of already allocated time.

Results on the Comprehensive Reading Assessment Battery (CRAB) (Fuchs, Fuchs, & Hamlett, 1989) indicated that the tutoring group significantly outperformed both the teacher effectiveness treatment group and the no-treatment control group on the number of words read ($F = 4.28$, $p < .05$) and on comprehension questions answered correctly ($F = 4.67$, $p < .05$). On words read correctly, the effect size was .35 when the tutoring group was compared to the control group and .30 when the tutoring group was compared to the teacher-effectiveness treatment group. The effect size for comprehension was .44 for the control group comparison and .28 for the teacher-effectiveness group comparison. The peer-tutoring group also outperformed the control group on a story summarization measure ($F = 3.76$, $p < .05$, ES = .52) and a maze task ($F = 3.49$, $p < .05$, ES = .77), and outperformed the teacher-effectiveness group on the reading comprehension subtest of the Stanford Achievement Test (Gardner, Rudman, Karlsen, & Mervin, 1982) ($F = 3.21$, $p < .05$, ES = .37). The overall average effect size of .35 reflects both the teacher-led and the no-treatment control group comparisons and includes several nonsignificant comparisons (see Table 4). It should be noted that the over all average effect size for peer tutoring compared to the control condition was .45. However, when compared to the teacher effectiveness treatment group, the effect size dropped to .24.

The peer-tutoring treatment developed by Simmons et al. (1990) was modified and extended in the Simmons et al. (1991) study. Repeated reading and paragraph restatement were modified for use with entire classrooms (i.e., classwide). The repeated reading and paragraph restatement treatment (i.e., Peabody model) was compared to an already established classwide peer-tutoring model developed at the University of Kansas Juniper Garden's Children's Project (i.e., Kansas model). The Kansas model consisted of sustained, oral reading practice followed by tutor generated comprehension questions.

Additionally, the role that the students with a disability played during the process was examined. In some classrooms, LD students served as tutees for half of each session and as tutors for half of each session. In other classrooms, LD students always served as tutees. Thus, there were four versions of classwide peer tutoring compared in this study: (a) version 1 representing the Kansas model with LD students serving both as tutees and tutors, (b) version 2 representing the Kansas model with LD students always serving as the tutee, (c) version 3 representing the Peabody model with LD students serving both as tutee and tutor, and (d) version 4 representing the Peabody model with LD students serving a tutee only. Tutoring sessions were conducted 3 times per week, for approximately 35 minutes per session for 14 weeks. Each of the 4 treatments was similar in focus (i,.e., fluency and comprehension) and time requirements. However, in the static-role versions, LD students received more oral reading practice. Additionally, the tutoring treatments were compared to a teacher-led, no-treatment control.

This study is distinctive because it compared four versions of peer tutoring and a control group. Additionally, this study independently tested the Kansas model, an established tutoring method. The Kansas model has been validated with low-achieving students and students with disabilities. However, studies examining the Kansas model were not included in this review because investigations with disabled students have used only single-subject design methods and group design studies did not provide data in which the disabled students could be examined separately, thus, these studies not meet inclusion criteria.

As in Simmons et al. (1990), the Comprehensive Reading Assessment Battery (CRAB) (Fuchs et al., 1989) was used to assess reading achievement in this study. The reported results included LD as well as average achieving students and low-achieving students. The findings indicated that all four peer-tutoring treatments significantly outperformed the control group on words read correctly ($F = 3.26$, $p < .05$). On comprehension questions answered correctly, only the reciprocal Peabody version (version 3) reliably exceeded controls. There were no reliable difference between tutoring groups and the control group on any other measures. Additionally, no tutoring treatment reliably outperformed any other treatment on any CRAB measure.

Effect sizes were calculated from reanalyzed data to include only the LD students. The effect size trends look different from the tests of statistical significance based on all subjects. As can be seen from Tables 3 and 4, role reciprocity appeared to be an important factor in the effect sizes. The two reciprocal versions (i.e., versions 1 and 3) yielded significantly greater effect sizes than the two static role versions (i.e., version 2 and 4). The average effect sizes from the two reciprocal treatments were not significantly different from each other (Kansas - reciprocal ES =. 76, Peabody - reciprocal ES = .65). Thus, superiority between these two treatments with LD students can not be inferred based on their effect sizes. However, statistical significance was evidenced between the average effect sizes of the two static role versions (Kansas - static role ES = -.07, Peabody - static role ES = .25) ($P < .05$). Thus, it can be inferred that given the static tutee role, the Peabody version is superior with LD students.

Based on these findings, it appears that LD students do benefit from classwide applications of peer tutoring and that this benefit is greater when they serve as both tutors and tutees. It is not clear why reciprocity of role makes a difference. In actuality, students who always served as tutees were afforded more supervised reading practice. It can be speculated that reciprocal versions allowed for modeling of fluent reading and comprehension, or that this formulation may increase students' investment in the process.

Discussion

The results of this review indicate that peer tutoring in reading with students with disabilities can be effective. In general, students with disabilities who participated in peer-tutoring reading interventions made greater reading achievement gains than control students who experienced typical teacher-directed reading instruction without researcher intervention. The effect sizes generated were generally educationally relevant and significantly different from zero. However, caution is necessary when interpreting the results. While peer tutoring in reading was generally effective, certain formulations resulted in impressive gains, while others evidenced only negligible results. Thus, it must be recognized that the effectiveness of peer tutoring in reading is dependent on the actual tutoring treatment and the needs of the learner.

Interestingly, peer tutoring in reading was not found to be superior to teacher-direct instruction when teachers implemented a researcher driven intervention (i.e., McCracken, 1979; Simmons et al., 1990; Sindelar, 1982). However, peer tutoring was found to be more effective than the traditional DRA reading lesson format (Harris & Sipay, 1985) typically followed by teachers in group instruction, even when the peer tutoring procedures followed the same basic format (Russell & Ford, 1983).

Unfortunately, none of the studies compared peer tutoring to other empirically validated methods such as cooperative learning (Stevens, Madden, Slavin, & Farnish, 1987) or Direct Instruction (Becker, 1984). Thus, as pointed out by Scruggs and Osguthorpe (1985) it remains unclear whether peer tutoring interventions with students with disabilities are equally or more effective than other validated interventions.

It is important to keep in mind that peer tutoring in reading represents only one of many interventions which probably deserve a place in the repertoire of both special education and general education teachers. It would be foolish to think that peer tutoring could or should represent students' total reading program. What is clear from the present review is that peer tutoring in reading with students with disabilities can promote significant reading growth as compared to typical reading instruction occurring in most special education and general education classrooms. As such it represents one promising methodology for improving the current state of reading instruction.

Consistency with Previous Reviews

Like the present review, previous reviews have concluded that students with disabilities usually evidence greater academic gain as a result of peer tutoring than they do from typical instruction (Cook et al., 1985-86; Osguthorpe & Scruggs, 1986; Scruggs et al., 1985; Scruggs & Richter, 1985). However, the findings of this best-evidence synthesis are somewhat more conservative than previous reviews. The present findings probably reflect a more accurate estimate of the true effect of peer tutoring in reading with students with disabilities since only methodologically adequate studies which focused on reading were included. Other reviews have made conclusions about peer tutoring in general based on studies from a variety of academic areas and have included studies of questionable technical merit. Given that both Cook et al. (1985-86) and Cohen et al. (1982) found the effects of peer tutoring in reading to be weaker than for other academic areas, it seems a mistake to generalize aggregated findings as if they were applicable to all academics. Additionally, previous reviews have discussed peer tutoring as if it were one intervention. However, many variations and formulations exist. As with most interventions, the efficacy of peer tutoring seems to depend on the actual tutoring treatment and the needs of the students.

Comparison to previous meta-analyses. Cook et al. (1985-86) presents the only meta-analysis in the literature to examine the effects of peer tutoring with students with disabilities. The Cook et al. (1985-86) review focused on the average effects for peer tutoring across academic areas. However, as an adjunct, average effect sizes by individual academic areas were calculated.

The overall average effect size calculated from the 11 studies included in the present review (ES =.36) represents a somewhat more reserved, yet consistent, estimate of the strength of peer tutoring in reading with students with disabilities. The Cook et al. (1985-86) meta-analysis reported an average effect size of .49 for peer tutoring on disabled tutees and .30 on disabled tutors in reading. Interestingly, the trend of these effect sizes for tutor/tutee role are opposite to the effect sizes found in the present review (ES tutee = 30; ES tutor = .42).

The Cook et al. (1985-86) meta-analysis included many studies which were excluded from the present review (i.e., Caspo, 1976; Lombardo, 1975; Melberg, 1981). These excluded studies reported very favorable tutee results. Additionally, the present best-evidence synthesis included several more recent studies not included by Cook et al. (i.e., Russell & Ford, 1983; Simmons et al., 1990, 1991). In all, the two reviews shared only the

Carlton (1981) (i.e., Carlton et al., 1985), Lamport (1982), and Top (1984) (i.e., Top & Osguthorpe, 1987) studies. Given that the pool of effect sizes for tutee and tutor effects were so different, it is clear how disparity between the findings of the two reviews occurred.

Interestingly, the findings of this best evidence synthesis and the Cook et al. (1985-86) meta-analysis yielded higher average effects sizes for peer tutoring in reading with disabled populations than the Cohen et al. (1982) meta-analysis with normally achieving populations. The average effect size for peer tutoring in reading reported by Cohen et al. (1982) was only .21. As theorized by Gerber and Kauffman (1981), it may be that peer tutoring has greater benefits for students with learning problems than for normally achieving students. One can speculate why peer tutoring appears to have stronger effects low-performing students and students with disabilities. However, given the evidence that students with disabilities are not afforded as many opportunities to practice reading as their higher performing counterparts (Allington, 1984; Hall et al., 1982) it may be that increasing opportunities to respond for these students allows them to "catch up" somewhat. Additionally, it is likely that normally achieving students have attained a level of automaticity, not yet achieved by students with disabilities; thus, as automaticity is achieved, gains are evidenced. Since the higher performing students have already achieved a high level of proficiency, achievement growth, as traditionally indexed, is less evident. Of course this remains speculative.

Peer Tutoring Characteristics

This best-evidence synthesis yielded average effect sizes that were extremely consistent across various study dimensions (see Table 2). Given this consistency, one might conclude that different formulations of peer tutoring are equally effective. However, the consistency of average effect sizes on different tutoring dimensions did not necessarily characterize the specific treatments. For example, based on aggregated data, one might conclude that serving in the role of tutor was more powerful for students with disabilities than other roles, but that serving as the tutee or in a reciprocal role were essentially equal. However, Simmons et al. (1991) demonstrated that for two different classwide peer tutoring treatments, the effects were significantly stronger when the students with disabilities served in a reciprocal role rather than as only tutees.

Two factors did reliably result in differences in the effect size obtained: a) comparison group and b) the interaction of setting and student role. When peer tutoring in reading was compared to a teacher-directed research intervention, the average effect size was negligible; however, when compared to a no-treatment control group in which teachers presented reading in their typical manner, the peer tutoring group outperformed their counterparts by nearly half a standard deviation.

Moreover, the interaction of the setting and the role that the disabled student played during tutoring made a reliable difference. In every instance in which: a) tutoring occurred in general education settings and b) the students with disabilities were tutors at least part of the time, significant results and strong effect sizes were achieved (Simmons et al., 1991;, Top & Osguthorpe, 1985, 1987). Thus, it may be that, at least in reading, students are more likely to make significant achievement gains when they are paired with general education students and when they are allowed to participate in the role of tutor at least part of the time.

Other factors determining the effectiveness of particular peer tutoring treatments appear to be specific to the individual treatment. For instance, the Beginning Reading (Harrison 1982) treatment was utilized in four studies. In two of these studies, the effects were negligible (Scruggs & Osguthorpe 1986), while in the other two the effects were substantial (Top & Osguthorpe, 1985, 1987). The factor which seems to account for this difference was the type of students who were paired together. When disabled students were paired with other disabled students, as in Scruggs and Osguthorpe (1986), the effects of the Beginning Reading treatment were negligible. However, when disabled students were paired as tutors of younger, normally achieving students, the results with the same treatment were quite impressive. However, concluding that disabled students need to be paired with nondisabled students for peer tutoring to be effective would be erroneous. Both Carlton et al. (1985) and Lamport (1982) achieved significant results and strong effect sizes with disabled students tutoring other disabled peers.

Based on the aggregated effect sizes, one might conclude that peer tutoring conducted in special education settings are less effective than tutoring treatments occurring in general education settings. Again, this appears to be a treatment specific phenomena. Carlton et al. (1985), Lamport (1982) and Russell and Ford (1983) all achieved impressive results in special education classrooms. Additionally, it must be remembered that the types of students who are found in special education classrooms are likely to more difficult to evidence achievement gains with, since they probably represent a lower-functioning group than students who have been mainstreamed. Thus, it would be expected for treatments to look less powerful in special education settings. However, evidence does indicate that, if the treatment is strong, impressive achievement gains can be achieved in special education settings.

Another treatment specific phenomena was evidenced in Simmons et al. (1991). In this study, widely different results on similar treatments were achieved by varying the role of the disabled learner. When the students with disabilities were allowed to be the tutor for part of the time, sound reading gains are achieved, but when the disabled students served only as the tutee, these gains were not evidenced. However, several other treatments achieved strong effects even when the student with a disability served only as a tutee (i.e., Russell & Ford, 1983; Simmons et al., 1990). Furthermore, in the static role versions, the two treatments achieved different results, even though both treatments were conducted classwide, occurred in the mainstream, had a multiple focus and provided for similar amounts of reading practice.

Thus, while it does appear that trends exist, it seems reasonable to conclude that tutoring treatments need to be assessed individually. Specific treatments such as the reciprocal, classwide treatments presented by Simmons et al. (1991), and the treatments based on the traditional DRA (Lamport, 1982; Russell & Ford, 1983) appear to be powerful, while others appear to have less strength. Of course this is an area that needs further research. The results of this review lead to the conclusion that one cannot assume that peer tutoring, in and of itself, will effect positive growth. Treatments must be carefully planned, trained and assessed.

Unanswered Questions. Many questions about peer tutoring in reading with students with disabilities remain unanswered and future research is necessary. Only future research will be able to sort out the following issues:

1). It not known how long daily sessions of peer tutoring should be, how often they should occur in a week, as well as how many weeks of the school year peer tutoring needs to be in effect for optimal growth.

2). Likewise, it is unknown which tutoring interventions provide the most power. However, in choosing or designing a peer tutoring intervention, it does seem likely that treatments which develop automaticity and also address comprehension are likely to promote better reading growth.

3. It is not known if peer tutoring is most effective used as a supplement to teacher-directed instruction, or if its use as an instructional replacement is most beneficial. However, evidence exists that even when tutoring totally replaces teacher-directed instruction, peer tutoring can still produces superior results (Russell & Ford, 1983).

4. Each of the studies which met inclusion criteria presented highly structured tutoring procedures in which the students received intensive training. No generalizations can be made about less structured and less trained procedures. Thus, it is not known how much structure is necessary for a peer tutoring treatment to be effective.

6. It is not known what level of complexity produces the greatest gains. For instance, Carlton et al. (1985) achieved impressive results with a very simple sight-word treatment. However, other low-complexity treatments did not exhibit the same effects. Positive results occurred more frequently with more complex tutoring procedures (Lamport, 1982; Russell & Ford, 1983; Simmons et al., 1990,1991).

5). Perhaps more importantly, it is not known how peer tutoring in reading with students with disabilities compares to other empirically strong methodologies or if other interventions are enhanced by the addition of peer tutoring component.

Conclusion

The purpose of this review was to synthesize the literature on peer tutoring in order to determine its efficacy on the reading achievement of students with disabilities. Results indicated that the effectiveness of peer tutoring in reading with students with disabilities is not an "all or nothing proposition." Its effectiveness is dependent on the specific tutoring treatment and the needs of the students.

The results of this best-evidence synthesis lead to several interesting conclusions. First, it appears that peer tutoring in reading with students with disabilities is generally more effective than the reading instruction students with disabilities typically experience. Of course, this finding is not surprising giving the current state of reading instruction. It is likely that an important reason why peer tutoring promotes greater reading growth is that it provides a structure in which students' opportunities to respond and become fluent on various reading skills is increased substantially. Moreover, it allows students to be carefully monitored and to receive immediate feedback and reinforcement on their reading performance.

Second, it may be that peer tutoring is more effective with disabled populations than with normally achieving populations. Of course, this is a question that needs to be examined empirically, but it does make sense that it would promote greater gain for students who are in need of greater opportunities to respond (Greenwood et al., 1984). Assuming that peer tutoring is more effective with disabled or low-achieving students, then it represents a useful methodology for narrowing the gap between normally achieving students and students with disabilities.

Third students with disabilities can effectively serve as tutors for their disabled and nondisabled peers when that tutoring procedures are highly structured and well trained.

Fourth, and relatedly, peers can provide instruction as well as teachers. This appears to be true for both disabled and nondisabled students. It is worth noting that no control group out-performed any tutoring group. Since this review included unpublished studies, the likelihood of finding a "no-effects" study was increased. Thus, it can be concluded that peer tutoring will not cause detrimental effects, even if it does not promote greater gain. This finding is important because it indicates that teachers can use peers as proxies for adult instruction without worrying that tutoring will have detrimental effects. Essentially, peers can be used to increase the options available to teachers for meeting the individual needs and increasing the academic engaged time of their students.

Fifth, assuming that peer tutoring in reading with students identified a disabled is not more effective than carefully designed and implemented teacher-directed instruction, it does appear to be more effective than having students off-task, waiting for their teachers, or completing busy work, as is typically observed in reading classes (Haynes & Jenkins, 1986; O'Sullivan et al., 1990; Simmons et al., 1990).

Sixth, specific formulations of peer tutoring in reading seem to hold great promise for aiding with mainstreaming efforts while simultaneously increasing the reading achievement of students with disabilities. Two formulations which produced significant gains in mainstream settings were cross-age tutoring in which the disabled student served as the tutor for younger, normally achieving students and classwide peer tutoring in which mainstreamed disabled students participated in tutoring activities simultaneously with all other students in a general education classroom. The classwide application seems to hold the greatest potential because: a) it provides mainstream teachers with a structure that is highly feasible to implement since it does not require the coordination of multiple classes and schedules, b) facilitates differentiated instruction since reading text and tutoring procedures can be individualized for specific students within the group, and c) enhances disabled students' ability to perform adequately in the mainstream by providing an environment which is highly structured, carefully monitored, highly reinforcing, and provides necessary opportunities to practice reading.

While much remains to be learned about peer tutoring in reading with students with disabilities, this best-evidence synthesis indicates that it can be a methodology of great power and utility. As such, it represents one promising intervention for the improving reading achievement of students with disabilities.

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Appendix A

Appendix A

Studies Which Did Not Meet Inclusion Criteria

Study	Reason(s) Excluded
Azcoitia (1983)	a) Nested design with only 1 classroom in each cell. b) Data for students with handicaps could not be analyzed separately.
Brown (1971)	Data for students with handicaps could not be analyzed separately.
Caspo (1976)	No control group
Elliot (1990)	a) Data for students with handicaps could not be analyzed separately. b) Utilized single subject methodology as primary data source. c) dependent measures directly linked to the treatment.
Eiserman (1988)	No control group for handicapped population.
Epstein (1978)	a) No evidence of initial equivalence or adjustment for non-equivalence of groups at pretest. b) Dependent measures directly linked to treatment.
Greenwood et al., (1990)	Data for students with handicaps could not be analyzed separately.
Jenkins et al. (1974)	a) Study duration less than six weeks. b) Utilized single subject design methodology.
Jenkins et al. (in press)	a) Nested design with only 1 school in each cell. b) Schools were not randomly selected. c) Multiple interventions in reading occurred simultaneously.
Lazerson (1980)	a) Dependent measures used to assess reading growth not specified. Unable to determine if dependent measures were linked to the treatment. b) Treatment implemented less than 6 weeks.

	weeks.
Lombardo (1975)	Posttest only design. Unable to determine initial equivalence of groups.
Lue (1981)	a) Dependent measures linked to treatment. b) Dependent measures not academic.
Maher (1982)	a) Dependent measures directly linked to tutoring treatment. b) Unable to determine if groups were initially equivalent and adjustments are presented
Maher (1986)	a) Dependent measures directly linked to tutoring treatment. b) No control group.
Melberg (1981)	a) Data for students with disabilities could not be analyzed separately. b) Only 1 subject had a labeled disability.
Shisler et al. (1986)	Nested design with only one teacher in each group.
Slavin (1980)	Data for students with disabilities could not be analyzed separately.
Strother (1984)	Data for students with disabilities could not be analyzed separately.
Willis et al. (1972)	No control group.

Appendix B

Form used to code studies.

Citation:

Keep
Yes No

Setting: Mainstream Special Education

School Based Study? Yes No

Experimental Design:

Teacher N = Each group *(Specify by group)*

Reading: Yes No
Type:
Experimental groups > 1

N =
Handicapped N =

Type(s) of Handicap & N

Yes No

Treatments Compared:

Control Group Yes No

Random Assignment of controls Yes No

Type of Tutoring		*Handicap Role*		*Structure:*
Classwide	Individuals	Tutor	Tutee	Structured
Cross-age	Same age	Both		Nonstructured
Expert	Reciprocal			

Random Assignment of experimental Yes No

How many types of tutoring compared? *(Specify)*

Evidence of initial equivalence: Yes No

If no - how controlled?

Study Duration *(Weeks)* Times per week Time per day

Reinforcement: None Competitive Cooperative Individualistic

Dependent Measures:

Was treatment keyed to measures? Yes No

Findings: Significance: p Effect Size

Summarize:

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Table 1

Coding Scheme and Intercoder Reliability Based on 10 Studies

Characteristic	Intercoder Reliability
School-Based Study	100%
Yes	
No	
Experimental Design of Study	100%
Pre/Post Randomly Assigned	
Pre/Post Matched Groups	
Pre/Post Nested - Randomly Assigned	
Pre/Post Nested - Nonrandom	
posttest only	
no comparison group	
Number of Teachers in Each Comparison Group	100%
Presence of Control Group	100%
Yes	
No	
Random Assignment of Groups	
Control	100%
Experimental	90%
Type of Subject Disability	90%
LD	
BD	
MR	
Combination	
Number of Subjects with disabilities	100%
Type of Reading Taught During Tutoring	100%
Phonics	
Sight word	
fluency	
Comprehension	
Multiple Focus (Comprehension & Decoding) (This category was collapsed into decoding or multiple focus)	

Tutoring Setting	80%
mainstream	
special education	
(If both tutee and tutor were disabled location was coded special education)	
Type of Tutoring	
Classwide or Individual Pairs	100%
Cross-age or peer	90%
Expert or Reciprocal	100%
Role of the Students with Disabilities	100%
Tutor	
Tutee	
Reciprocal	
Structure of Treatment	100%
Structured	
Unstructured	
Type of Reinforcement System	100%
None Discussed	
Competitive	
Cooperative	
Individualistic	
Study Duration	100%
Time Per Week Tutoring Occurred	100%
Daily Time of Tutoring Sessions	100%
Proximity of Dependent Measures to Treatment	
Directly Linked	100%
Close match or Dissimilar	86%
Over All Agreement	97.8%

Table 2

Average Effect Sizes for Specific Study Characteristics

Characteristic	**Average Unbiased Effect Size**
Overall	+.36
- Compared to another treatment	.14
- Compared to teacher-led control	+.40
Setting	
- Special Education Classroom	+.27
- General Education Classroom	+.42
Role of Student with Disability	
- Tutee	+.30
- Tutor	+.42
- Reciprocal	+.34
Tutor or Reciprocal Role and Setting	
- Special Education	+.27
- General Education	+.45
Age Arrangement	
- Cross-age	+.38
- Peer	+.32
Classroom Arrangement	
- Classwide	+.35
- individual	+.36
Reading Activity	
- Decoding	+.35
- Multiple Focus	+.37
Tutor Academic Level	
- Expert	+.36
- Similar to Tutee	+.34

+ Overall Effect Size significantly different from zero.

Table 3
Characteristics of Studies

Article	Grades	Sp.Ed. n	Label	Setting	Duration (Weeks)	Design	Reading Activity	Tutoring Type	Role	Effect Size
Carlton et al. 1985	5-6	136	EMR	Sp.Ed Class	6	Teachers randomly assigned to treatments. No-treatment control.	Sight Words	Classwide Peer Expert Model	Tutor or tutee - Static	+.38
Lamport 1982	6	24	LD	Sp.Ed. Class	8	Subjects in matched groups based on reading ability. No-treatment control.	Multiple Focus	Individual Cross-age Expert Model	Tutor or Tutee - static	+.44
McCracken 1979	9-12	84	LD (5 = EMR)	Sp.Ed. Class	12 Approx.	Classes randomly assigned to treatment groups. Peer tutoring compared to teacher, one-on-one tutoring.	Decoding	Classwide Peer Expert model	Tutee	+.08
Russell & Ford 1983	7	32	EMR	Sp.Ed. Class	15 Approx.	Subjects randomly assigned to treatments. Same teachers in both groups.	Multiple Focus	Individual Cross-age Expert Model	Tutee	+.75
Scuggs & Osguthorpe 1986 Exp #1	1-5	47	LD & BD	Sp.Ed. Class	10	Subjects randomly assigned to groups after being identified by teachers as possible tutors. No-treatment control.	Decoding	Individual Cross-age Expert Model	Tutor	.07
Scruggs & Osguthorpe 1986 #2	2-5	30	LD & BD	Sp.Ed. Class	8	Subjects in matched groups. Tutoring pairs determined by teachers before matching occurred. No-treatment control.	Decoding	Individual Peer Reciprocal	Both Tutor & Tutee	.23
Simmons et al. 1990	2-5	44	LD	General Class	8	Teachers randomly assigned to experimental groups. Teacher volunteered for control condition. No-treatment control.	Multiple Focus	Individual Peer Expert Model	Tutee	+.35 + vs ET .24 vs Control = +.45

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Article	Grades	Sp.Ed. n	Label	Setting	Duration (Weeks)	Design	Reading Activity	Tutoring Type	Role	Effect Size
Simmons et al. 1991	2-5	58	LD	General Class	14	Teachers randomly assigned to 4 peer-tutoring groups. Teachers volunteered for control condition. No-treatment control.	Multiple Focus	Classwide Peer Reciprocal	Both	Total = +.38 Version 1 = +.76 Version 2 = -.07 Version 3 = +.66 Version 4 = .26
Sindelar 1982	3	63	LD	Sp.Ed. Class	6 Approx.	Teachers randomly assigned to 3 peer-tutoring groups and 1 teacher-led treatment group. Teacher group used same methodology as 1 peer-tutoring group	Varied by Condition	Individual Cross-age Expert Model	Tutee	* ** .07
Top & Osguthorpe 1986	4-6	64	BD & LD	General Class	12	Teachers randomly assigned to each condition. No-treatment control.	Decoding	Individual Cross-age Expert Model	Tutor	+.63
Top & Osguthorpe 1987	4-6	78	BD & LD	LD in General Class. BD in Sp.Ed Class.	14	Teachers randomly assigned to each condition No-treatment control.	Decoding	Individual Cross-age Expert Model	Tutor	+.48

* Significantly different from zero (p < .05)

* Effect size based on comparison to a teacher-led treatment group.

** Effect size based on reading rate measures only. Data not available to determine other effect sizes.

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Table 4

Unbiased Effects Sizes for Individual Dependent Measures and Formulas Employed

Study	Dependent Measure	Formula	Unbiased Effect Size[a]
Carlton et al. 1985	Gates-MacGinitie		
	- Vocabulary - Tutee	Final Status	.38
	- Comprehension - Tutee	↓	.42
	- Vocabulary - Tutor	Gain Score	.33
	- Comprehension - Tutor	↓	.38
Lamport 1982	Stanford Diagnostic Reading Test		
	- Auditory Vocabulary - Tutor	*F* Statistic	.14
	- Comprehension - Tutor	↓	.22
	- Phonic Analysis - Tutor	ANCOVA	1.04
	- Auditory Vocabulary - Tutee	↓	.69
	- Comprehension - Tutee	*F* Statistic	.29
	- Phonic Analysis- Tutee	↓	.33
McCracken 1979	Slosson Oral Reading Test		
	- Word Recognition	*t* statistic	.11
	- Comprehension	↓	.05
Russell & Ford 1983	Peabody Individual Achievement Test		
	- Reading Recognition	Final Status	.52
	- Comprehension	↓	1.00
Scruggs & Osguthorpe 1986 #1	Harrison Criterion Decoding Test		
	- Decoding - Tutee	Gain Score	.25
	- Sight Word -Tutee	↓	.12
	- Overall Word Recognition - Tutee		.30
	- Decoding - Tutor		-.04
	- Sight Word -Tutor		-.16
	- Overall Word Recognition - Tutor		.00
	Woodcock Johnson Psycho-educational Battery		
	- Word Recognition - Tutee		.14
	- Word Attack - Tutee		.20
	- Passage Comprehension - Tutee		.15
	- Word Recognition - Tutor		-.11
	- Word Attack - Tutor		.22
	- Passage Comprehension - Tutor		.29

Study	Dependent Measure	Formula	Unbiased Effect Size
Scruggs & Osguthorpe 1986 #2	Harrison Criterion Decoding Test		
	- Decoding	Gains Score	.52
	- Sight Word	↓	.37
	- Overall Decoding		.51
	Woodcock-Johnson Psycho-educational Battery		
	- Word Recognition		-.01
	- Word Attack		.18
	- Comprehension		-.16
Simmons et al. in review	Comprehensive Reading Assessment Battery		
	(Compared to Control)		
	- Words Read Correctly	ANCOVA	.35
	- Comprehension	↓	.44
	- Maze Correct		.77
	- Retell Matches		.52
	(Compared to Teacher Effectiveness Treatment)		
	- Words Read Correctly		.30
	- Comprehension		.28
	- Maze Correct		.25
	- Retell Matches		-.02
	Stanford Reading Achievement		
	- Compared to Control		.20
	- Compared to Teacher Effectiveness Treatment		.37
Simmons et al. 1991	Comprehension Reading Assessment Battery		
	Version 1 (Kansas Model - Reciprocal)		
	- Words Read Correctly	ANCOVA	.79
	- Comprehension	↓	.66
	- Maze Correct		.53
	- Retell Matches		1.08
	Version 2 (Kansas Model - Static Role)		
	- Words Read Correctly		-.14
	- Comprehension		-.21
	- Maze Correct		-.25
	- Retell Matches		.31
	Version 3 (Peabody Model - Reciprocal)		
	- Words Read Correctly		.41
	- Comprehension		.66
	- Maze Correct		.93
	- Retell Matches		.62
	Version 4 (Peabody Model - Static Role)		
	- Words Read Correctly		.32
	- Comprehension		.13
	- Maze Correct		.45
	- Retell Matches		.09

Study	Dependent Measure	Formula	Unbiased Effect Size
Sindelar 1982	Nonstandardized Measure of Reading Rate		
	- Word Recognition Group	ANCOVA	.13
	- Oral Reading Group	↓	-.04
	- Hypothesis/Testing Group		.13
Top & Osguthorpe (1985)	Woodcock-Johnson Psycho-educational Battery		
	BD Subjects		
	- Word Attack	F Statistic	.76
	- Passage Comprehension	↓	.87
	- Total Reading		.70
	LD Subjects		
	- Word Attack		.61
	- Passage Comprehension		.52
	- Total Reading		.98
	All Subjects		
	- Word Recognition		.32
	- Word Attack		.68
	- Passage Comprehension		.62
Top & Osguthorpe 1987	Woodcock-Johnson Psycho-educational Battery		
	- Word Recognition	F Statistic	.03
	- Word Attack	↓	.95
	- Passage Comprehension		.41
	- Total Reading		.57

[a] Effect size is positive unless otherwise denoted.

Apendix D

Measures

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
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Teacher: **Target Student:**

Date: **Time Instruction Began:** **End Time:**

Reading Instructional Time Use

Curricular Materials:

Teacher-Directed Instruction	Oral Reading	Silent Reading	Independent Seatwork	Waiting
Total	**Total**	**Total**	**Total**	**Total**

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TEACHER EFFECTIVENESS RATING FORM

Observer: ____________________ Date: ______________

Teacher: ____________________ Lesson Content: __________

Observation Time: Beginning: ____________ End: __________

Lesson Objective: ______________________________

Time Allocated for Lesson: ________ # of Students in Group: ______

TIME MANAGEMENT

1. The amount of time allocated for group reading instruction was:

____ a. more than 40 minutes
____ b. 30-40 minutes
____ c. 30 minutes
____ d. less than 30 minutes

2. The proportion of allocated time actually spent in reading instruction was:

____ a. 80% or more of time allocated (2)
____ b. 60-79% of time allocated (1)
____ c. Less than 60% (0)

3. The proportion of the allocated time spent in teacher-directed instruction was:

____ a. 75% > of time allocated (2)
____ b. 50-75% of time allocated (1)
____ c. Less than 50% of time allocated (0)

Time Management Summary Score: /4 (Includes #2 and #3 only)

BEFORE INSTRUCTION TEACHING BEHAVIOR

Review/Reteaching

4. This teacher reviews/reteaches preskills and/or prior learning before introducing a new skill.

____ a. Yes (1)
____ b. No (0)

Review Summary Score: /1

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DURING INSTRUCTION TEACHING BEHAVIOR

Framing

5. This teacher specifies the objective of the lesson.

____ a. Yes (1)
____ b. No (0)

6. This teacher states the relevance of the to-be-learned skill.

____ a. Yes (1)
____ b. No (0)

Framing Summary Score: /2

Skills Presentation

7. When presenting a skill, the teacher models:

____ a. Multiple examples (2)
____ b. A few examples (1)
____ c. No examples (0)

8. This teacher presents information in small steps.

____ a. Almost always (2)
____ b. Sometimes (1)
____ c. Hardly ever (0)

9. This teacher maintains a brisk pace during instruction.

____ a. Almost always (2)
____ b. Sometimes (1)
____ c. Hardly ever

10. When presenting new information, the teacher checks for student understanding.

____ a. Frequently (2)
____ b. Sometimes (1)
____ c. Hardly ever (0)

Skills Presentation Summary Score: /8

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Guided Practice Teacher Behaviors

11. When requesting a student response, the teacher allows sufficient think time.

____ a. Almost always (2)
____ b. Sometimes (1)
____ c. Hardly ever (0)

12. When checking for understanding, this teacher provides low performing students:

____ a. Multiple opportunities to respond (2)
____ b. A few opportunities to respond (1)
____ c. Almost no opportunity to respond (0)

13. When requesting responses, the teacher uses: (50% or more of the time)

____ a. Mixture of group and individual responses (1)
____ b. Primarily individual responses (0)

Guided Practice Summary Score: /5

Correction/Feedback Behaviors

14. When students respond **incorrectly**, the teacher:

____ a. Provides corrective feedback by presenting correct information or cuing correct response through rules and prompts (2)
____ b. Indicates answer is incorrect and provides no model (1)
____ c. Restates the task (1)
____ d. Goes to another child for correct answer (0)
____ e. Provides no correction (0)
____ f. No corrections needed

15. The teacher reinforces correct responses to tasks:

____ a. Almost always (2)
____ b. Sometimes (1)
____ c. Hardly ever (0)

Correction/Feedback Summary Score: /4

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INDEPENDENT PRACTICE/AFTER INSTRUCTION TEACHING BEHAVIORS

16. Before independent seatwork, this teacher:

____ a. Introduces tasks and walks students through the first few examples (2)
____ b. Reviews directions, asks students for questions, has students perform tasks (1)
____ c. Assigns page numbers and asks students to perform tasks (0)

17. During the first few minutes of independent seatwork, the teacher:

____ a. Monitors (circulates if large group) students working independently and provides feedback (2)
____ b. Scans students working independently (1)
____ c. Fails to monitor group (0)
____ d. No independent practice observed

18. During the remainder of independent seatwork, the teacher:

____ a. Systematically monitors students working independently (2)
____ b. Occasionally monitors students working independently (1)
____ c. Fails to monitor students working independently (0)
____ d. No independent practice observed

19. At the end of teacher-directed instruction, the teacher reviews new information:

____ a. Yes (1)
____ b. No (0)

Independent Practice/After Instruction Summary Score: /7

Summary Implementation Score:

Time Management (/4) + Review (/1) + Framing (/2) + **Skills Presentation** (/8) + Guided Practice (/5) + **Correction/Feedback** (/4) + Independent Practice Preparation (/7) = __________.

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Teacher Effectiveness Rating Form: Definition

TIME MANAGEMENT

1. Amount of time allocated for group reading instruction.

Time actually allocated for instruction. Teacher may not use this time for reading. Key is that it is allocated in the schedule for reading instruction.

2. The portion of allocated time spent in reading instruction:

Portion of the allocated time that the student is engaged in activities directly related to reading instruction. Can include worksheets or independent work which is clearly part of reading instruction. Does not include time students spend working on other academics such as spelling or English.

3. The portion of allocated time spent in teacher-directed instruction.

Portion of time that the teacher actively and directly teaches the target student(s). This instruction can occur to the group or individually, but must include the target student(s).

BEFORE INSTRUCTION TEACHING BEHAVIOR

4. This teacher reviews/reteaches preskills and/or prior learning before introducing a new skills.

The teacher reviews previously taught skills necessary for the present lesson. This may include teaching new vocabulary to be used in a new story, establishes students' prior knowledge about a topic to be read, etc...

DURING INSTRUCTION TEACHING BEHAVIOR

Framing

5. Teacher specifies objective.

Teacher directly tells the student the topic of what they are about to do. It can include a simple statement that of the next activity. It is not something that is "discovered" at some point during the lesson. If the observer is not clear what the objective is at the beginning of the lesson, the teacher does not get credit. Also, reading the title of a worksheet does not count as stating the objective.

6. Teacher states the relevance of the to-be-learned skill.

Teacher tells the students why they are doing what they are doing. Activities have a clear purpose other than keeping the student busy.

Skills Presentation

7. When presenting a skill, the teacher models:

Modeling means that the teacher show the skill(s) directly. Does not include explanation of how to do something. Includes direct demonstration only. Examples include: reading new words and using the new word in multiple sentences, sound blending new words, using a rule to find the main idea.

a. multiple examples - teacher models more than two skills through out the lesson using multiple exemplars.

b. A few examples - teacher models only one or two skills with only one or two examples.

c. No models - teachers does not model skills. Uses explanation or student prompting instead.

8. This teacher presents information in small steps.

New information is broken down into small steps, interspersed by checks for understanding. Reading stories is broken down into small chunks as well.

a. Almost always - all parts of the lesson are broken into small chunks

b. Sometimes - parts of the lesson are broken down into small chinks

c. Hardly ever - Teacher rarely breaks information down (ie, students read large amounts before checking understanding, new words are presented without review or checking for master, etc...).

9. Teacher maintains a brisk pace during instruction.

Teacher presents information quickly, with little down time. Students are kept engaged. If students are off task a great deal, the teacher does not get credit for brisk pace.

a. Almost always - all parts of the lesson flow smoothly with high rate of engagement and low rates of down time.
b. Sometimes - parts of the lesson flow, while other do not.
c. Hardly ever - lesson is slow with down time and high rate of off task behavior.

10. When presenting new information the teacher checks for student understanding.

Teacher frequently monitors students to make sure they are performing at high rates of proficiency. This would include listening to oral reading, asking comprehension questions, asking skill questions, ask the students to demonstrate a process of rule use.

a. Frequently - During all parts of a lesson, students are frequently asked to perform skills for the teacher.
b. Sometimes - During specific parts only of the lesson, the teacher requires the students to perform skills or the teacher asks to target student to perform skill(s) only a few time throughout the lesson.
c. Hardly ever - Teacher doesn't really monitor the students acquisition of new learning. This occurs when the student is part of a group and is not checked directly, or if the student works independently on new information presented in worksheets etc...

GUIDED PRACTICE TEACHER BEHAVIORS

When requesting a student response, the teacher allows sufficient think time.

11. The teacher doesn't cut the student off by going to another student immediately. However, the teacher does not put the student on the spot after it is clear that the student doesn't know the information. She may use prompts to help the student.

a. Almost always - think time is almost always appropriate.
b. Sometimes - Teacher in unpredictable. Sometimes she does, sometimes she doesn't.
c. Hardly ever - teacher either doesn't give student enough time or doesn't help student while sticking with him/her.

12. When checking for student understanding, this teacher provides low performing students:

a. Multiple opportunities to respond - target student responds in some form about every 1 to 2 minutes. This does not include completing worksheets. Listening to others respond does not count.
b. A few opportunities to respond - Target student demonstrates level of proficiency for the teacher at least once every 5 minutes. If Student gets multiple chances during one segment and a few opportunities the rest of the lesson, the teacher would get this credit.
c. Almost no opportunity - If student responds directly to the teacher less than 1 time in five minutes. Student may get one opportunity to read or answer a few questions or is working independently for the majority of the time.

13. When requesting responses, the teacher uses:

a. Mixture of group and individual responses - teacher uses unison responses when appropriate.
b. Primarily individual

CORRECTION/FEEDBACK BEHAVIORS

14. When students respond incorrectly, the teacher:

a. Provides corrective feedback by presenting correct information or cueing response through rules and prompts.
   - teacher models directly the correct response or provides rule or prompt to help student arrive at correct answer. This is the primary correction procedure.
b. Indicates answer is incorrect and provides no model.
   - Tells the student to try again without prompting, modeling or indicating rule.
c. Restates the task: Asks the question in another way, but provides no model, rule, or prompt.
d. Goes to another child.
e. Provides to correction - may ask other children's opinion or drops questions. Child may be confused if answer was correct or incorrect.
f. No corrections needed.

15. The teacher reinforces correct responses to tasks.

a. Almost always - Ratio of about 1 reinforcement for every 3 correct responses.
b. Sometimes - teacher reinforces correct responses sporadically - less than 1 per 3 correct responses.
c. Hardly ever - Teacher rarely reinforces responses. Less than twice during the lesson.

INDEPENDENT PRACTICE

16. Before independent seatwork:

a. Introduces task and walks students through first few steps.
   - Teacher makes sure students are ready to complete tasks before requiring students to perform tasks independently.
b. Reviews directions, asks students for questions, has students perform tasks.
c. Assigns page numbers and asks students to perform tasks.
   - Teacher basically sets students on their own.

17. During the first few minutes of independent seatwork:

a. Monitors students working independently and provides feedback.
   - teacher really looks at students answers to make sure they are performing at high levels and helps when necessary. If see consistent error reteaches group.
b. Scans students working independently.
   - Teacher watches the group working independently, but does not attend to actual student responses.
c. Fails to monitor - teacher works with another group or attends to other tasks.

18. During the remainder of independent seatwork, the teacher:

a. Systematically monitors students working independently: Teacher circulates amongst the students, attending to student answers.
b. Occasionally monitors: Teacher attends to students part of the time and other tasks or students part of the time.
c. No independent practice observed.

19. At the end of the lesson, he teacher reviews new information.

Teacher goes over important information covered during the lesson before the students leave. This may include reviewing a new concept, rule, procedure, vocabulary words, or story content.

COMPREHENSIVE READING ASSESSMENT BATTERY
(CRAB)

DIRECTIONS

Use the student's test packet to determine (a) the order in which you should administer the retell and the maze measures and (b) what passage you should use for each measurement with each pupil.

Follow the procedures specified in these directions exactly. It is very important that all students are administered the CRAB in the same fashion.

Introduction

1. Rapport
    a. Before beginning testing, you must first establish rapport with each child.
    b. Take approximately 3 minutes to talk with the child about subjects relevant to him/her. Possible subjects might include: current school activities, favorite TV shows, favorite subject in school, comment on clothing, etc.
    c. Make sure the child is seated comfortably in the testing room and feels at ease with you before explaining the purpose of the test and before engaging in any test-related activities.
2. Read the following as an introduction:

    "I'm here today because I want to learn about your reading skills. I'm going to ask you to read some stories, to answer some questions, and to do some writing. It is very important that you try your best and that you work as hard as you can. Do you have any questions?"

Retell Directions

1. Oral Reading Segment

Have the student read orally from the appropriate passage (see attached form) for 3 minutes, using the following procedure:

a. Put a black and white copy of the passage in front of and facing the student.

b. Place a blue and white copy of the passage in front of you. Make sure the teacher's name, the student's name, and the date are at the top of the blue and white copy.

c. Say to the student:

"**I have a story I want you to read out loud. After reading it, I will ask you to retell the story in writing, in your own words or in the author's words. After you retell the story, I will ask you some questions about what you have read. You will have 3 minutes to read the story to me. Please read carefully. Any questions? Now, read the title out loud to me.**"

d. Have the student read the title of the story out loud. Do not assist in decoding. Do not time reading of the title or help with any words. After the student has read the title, say:

"**Now, start the story. Begin.**"

Trigger the stopwatch.

e. Mark oral reading errors on your blue copy of the text with slashes. Insertions, omissions, mispronunciations, and substitutions are errors. The omissions of endings (ed, s, and ing) are errors. Self-corrections are not errors. Do not code type of reading errors.

f. Do not correct any reading errors or help to decode. If the student asks for the meaning of a word or asks you what a word is, say:

"**Please continue reading, and do the best you can by yourself.**"

If he perseverates on a word for 3 seconds, say, "**Go on**."

g. At the end of 3 minutes, say, "**Stop**."

Mark the last word by putting a double slash after it. If the student finishes the passage in less than 3 minutes, write the total time for reading at the end of the passage.

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2. Retell Segment

Present the student with a lined piece of paper for the retell. Make sure that the teacher's name, the student's name, and the date are at the top.

a. Say:

"Here is a piece of paper. When I say begin, I want you to write down everything you can remember reading. Write what the story is about. You can use your own words or the exact words in the story as you remember them. Write everything you would want to tell someone who has never read this story. You will have 5 minutes to write. Any questions?"

b. If the student is not clear as to what is being requested, or if the student finishes before the 5 minute time limit, prompt him by saying:

(i) **"What was this story about?"**
(Allow 30 seconds of no response before proceeding to the next prompt.)

(ii) **"What else did the story say?"**
(Allow 30 seconds of no response before proceeding to the next prompt.)

(iii) **"Do you remember anything else?"**
(Allow 30 seconds of no response before proceeding to the next prompt.)

(iv) **"Is there anything else you can write about the story?"**
(Allow 30 seconds of no response before terminating the retell.)

c. Terminate the retell at the end of 5 minutes or after the student has been prompted 4 times, and 30 seconds after that last prompt have elapsed.

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3. Comprehension Question Segment

Ask the student the 10 comprehension questions associated with the passage the student has just read and retold.

a. Say to the student:

"Now I have some questions to ask you about the story, which I want you to answer. Listen carefully to each question. I will read each question only one time. If you do not know the answer to a question, you may say that you don't know. Try your best. Any questions?

b. Read each question, and write the student's response to each question on the form. If, at any point, the student has made five consecutive, obviously wrong responses, stop asking the questions.

c. Put the teacher's name, the student's name, and the date at the top of the question sheet.

4. Paper Work

Attach the oral reading sample, the retell, and the comprehension question sheet. Make sure these are identified with the pupil's and the teacher's names, as well as the date.

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MAZE PROCEDURE

1. Maze Segment

   a. Say:

   "The story you are going to read has some places where you need to choose the correct word. You will read the story, and whenever you come to three words that are in parentheses and underlined, you will choose the word that belongs in the story. Before we begin, we will do some examples."

   Give the student the Maze Practice Activity. Then say:

   "The story begins, "Jane had to take piano lessons. Her mom and dad made her go. Jane from/did/soda not like playing the piano." Which one of the three underlined words (from, did, or soda**) belongs in the sentence? The correct word is did."**

   (Check the student's paper.)

   Say:

   "Now let's try the next sentence in the story. You read the sentence to yourself, and circle the word that fits in the story."

   Monitor the students' work. Provide feedback/correction. Provide as much assistance/instruction as necessary to try to teach the task to the child. Continue the practice activity until the student has completed two blanks correctly or has finished the sample activity.

   Then, place the appropriate (see child's test packet) maze passage in front of and facing the pupil. Say:

   "Now you are going to do the same thing by yourself. Whenever you come to three words that are in parentheses and are underlined, circle the word that belongs in the sentence. Choose a word even if you're not sure of the answer. At the end of 2 minutes, I will tell you to stop working. Remember to do the best you can. Any questions?

   b. Have the student read the title of the story. Do not assist in decoding. Then, say:

   "Start."

   Trigger the stopwatch.

After 30 seconds, say:

"Remember, choose a word even if you're not sure of the answer. Do the best work you can."

c. If the pupil asks for help, do not provide any. Say:

"Try to figure out the answer on your own. Do the best you can by yourself."

d. At the end of 2 minutes, say, "**Stop**."

Make sure the paper is identified with the student's and teacher's names, as well as with the date.

e. If the student finishes in less than 2 minutes, record the time elapsed at the end of the passage.

2. Oral Reading Segment

Conduct an oral reading sample with a clean, complete copy of the passage on which the student just completed the maze.

a. Put a black and white copy of the passage in front of and facing the student.

b. Place a blue and white copy of the passage in front of you. Make sure the teacher's name, the student's name, and the date are at the top of the blue and white copy.

c. Say to the student:

"I want you to read this story out loud to me. After you read the story, I will ask you some questions about the story. You will have 3 minutes to read the story to me. Please read carefully. Any questions? Now, read the title out loud to me."

d. Have the student read the title of the story out loud. Do not assist in decoding. Do not time reading of the title or help with any words. After the student has read the title, say:

"Now, start the story. Begin."

Trigger the stopwatch.

e. Mark oral reading errors on your blue copy of the text with slashes. Insertions, omissions, mispronunciations, and substitutions are errors. The omissions of endings (ed, s, and ing) are errors. Self-corrections are not errors. Do not code type of reading errors.

f. Do not correct any reading errors or help to decode. If the student asks or the meaning of a word or asks you what a word is, say:

"**Please continue reading, and do the best you can by yourself.**"

If he perseverates on a word for 3 seconds, say, "**Go on.**"

g. At the end of 3 minutes, say, "**Stop.**"

Turn off the stopwatch. Mark the last word by putting a double slash after it. If the student finishes the passage in less than 3 minutes, write the total time for reading at the end of the passage.

3. Comprehension Question Segment

Conduct the comprehension questions activity on the passage the student just mazed and read.

a. Say to the student:

"**Now I have some questions to ask you about the story, which I want you to answer. Listen carefully to each question. I will read each question only one time. If you do not know the answer to a question, you may say that you don't know. Try your best. Any questions?**"

b. Read each question and write the student's response to each question on the form. If, at any point, the student has made five consecutive, obviously wrong responses, stop asking the questions.

c. Put the teacher's name, the student's name, and the date at the top of the question sheet.

4. Paper Work

Attach the maze, the oral reading sample, and the comprehension question sheet. Make sure that all the papers are labeled with teacher's and student's names, as well as the date.

Date______________________

A

THE KETTLE THAT WOULD NOT WALK

One day a man was going to the market. His wife said to him, "Husband, we need a new iron kettle for the fireplace. Would you please buy one?"

So the man bought a kettle at the market. It began to get dark. He took it on his arm and started for home. But the kettle was very heavy. His arm grew tired of carrying it. So he set it down.

While he was resting, he saw that the kettle had three legs. He scolded it and said, "What a pity I did not see those legs before! Here you have three legs. I have only two. Yet I have been carrying you. Well, you will take me the rest of the way."

Then he got inside the kettle. He said, "Now, go on. I am all ready to be taken home." But the kettle stood still on its three legs. It would not move.

"Ah!" said the man. "You are a stubborn little kettle, aren't you? You want me to keep on carrying you, I guess. But I will not. I will tell you the way. You can stay where you are or you can follow me."

So the man told the kettle the way to his house. Then the man went on his way. Soon he reached home. His wife asked him where the kettle was. "Oh, it will be along soon," he replied. She did not understand his answer.

He told her, "The kettle I bought has three legs. It was more able to walk here from the market than I am. I only have two legs. When I saw its legs, I put it down on the ground right away. I told

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it to walk the rest of the way by itself. I wasn't about to carry that kettle any farther."

Do not worry, dear wife," said the man, "I told it the way. It will be along soon." "Where did you leave it?" asked the worried wife. "At the bridge," he replied.

She was not as sure as he was that the kettle would come. So she went off to get it. She brought it home. The man said, "I am glad you have brought it home safely, wife. I was thinking it might have walked back to the market if I had left it alone much longer."

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A

THE KETTLE THAT WOULD NOT WALK

One day a man was going to the market. His wife said to him, "Husband, (on/we/say) need a new iron kettle for (the/cat/me) fireplace. Would you please buy one?"

(It/So/I) the man bought a kettle at (tick/saw/the) market. It began to get dark. (At/He/For) took it on his arm and started (see/mat/for) home. But the kettle was very (kite/come/heavy). His arm grew tired of carrying (see/it/or). So he set it down.

While (in/top/he) was resting, he saw that the (kettle/catch/fight) had three legs. He scolded it (tip/and/cap) said, "What a pity I did (for/each/not) see those legs before! Here you (nose/mold/have) three legs. I have only two. (Toy/Yet/List) I have been carrying you. Well, (you/mat/too) will take me the rest of (the/slip/maul) way."

Then he got inside the (sister/orange/kettle). He said, "Now, go on. I (am/of/tip) all ready to be taken home." (Slow/Act/But) the kettle stood still on its (three/touch/force) legs. It would not move.

"Ah!" (tick/said/tall) the man. "You are a stubborn (little/track/piece) kettle, aren't you? You want me (or/at/to) keep on carrying you, I guess. (Too/Fix/But) I will not. I will tell (you/for/pie) the way. You can stay where (you/list/on) are or you can follow me."

(Cut/So/Top) the man told the kettle the (for/one/way) to his house. Then the man (team/most/went) on his way. Soon he reached (home/all/seek). His wife asked him where the (locust/kettle/ invent) was. "Oh, it will be along (more/tall/soon)," he replied. She did not understand (his/top/see) answer.

He told her, "The kettle (as/I/or) bought has three legs. It was (mast/fort/more) able to walk here from the (market/little/talker) than I am. I only have (see/test/two) legs. When I saw its legs, (on/as/I) put it down on the ground (fender/seeker/right) away. I told it to walk (the/mat/in) rest of the way by itself. (I/To/Not) wasn't about to carry that kettle (mall/any/toe) farther."

Do not worry, dear wife," (said/form/under) the man, "I told it the (for/way/mix). It will be along soon." "Where (tick/said/did) you leave it?" asked the worried (wife/more/east). "At the bridge," he replied.

She (sip/for/was) not as sure as he was (team/that/call) the kettle would come. So she (touch/form/went) off to get it. She brought (for/it/not) home. The man said, "I am (glad/for/more) you have brought it home safely, (teak/cut/wife). I was thinking it might have (flags/walked/mother) back to the market if I (had/met/so) left it alone much longer."

Student ____________________ Teacher ____________________

Date ____________________ Examiner ____________________

THE KETTLE THAT WOULD NOT WALK (A)

1. What did the wife want her husband to buy at the market?

____

2. Why did the man have to set the kettle down?

____

3. What did the man see while he was resting?

____

4. What did the man want the kettle to do?

____

5. Why did the man think the kettle should carry him?

____

6. What did the kettle do when the man got inside?

____

7. What did the man tell the kettle before he went on his way?

____

8. What did the man tell his wife?

____

9. Where did the man leave the kettle?

____

10. Why did the wife go to the bridge?

____

Name ______________________ Teacher ______________________

Date ______________________

B

THE FATHER, HIS SON, AND THEIR DONKEY

A father and his son were taking their donkey to town to sell him at the marketplace. They had not gone very far when they met a group of pretty maidens who were coming back from the town.

The young girls were talking and laughing. Then one of them cried out, "Look there. Did you ever see such fools? They are walking along side the donkey when they could be riding it."

When the father heard this, he told his son to get upon the donkey. The father continued to stroll along merrily. They traveled a little further down the road. Soon they came upon a group of old men talking.

"There," said one of them, "That proves what I was saying. No respect is shown to old age in these days. Do you see that lazy young boy riding the donkey? His father has to walk. You should get down and let your father ride!"

So the son got down from the donkey. The father took his place. They had not gone far when they came upon a group of women and children.

"Why, you lazy old fellow! You should be ashamed," cried several women at once. "How can you ride upon the beast? That poor little boy can hardly keep up with you." So the good-natured father pulled his son up behind him.

By now they had almost reached the town. "Tell me friend," said a townsman. "Do you own that donkey?" "Why yes," said the father. "Well, I don't think so," said the townsman. "You overwork him. You two are strong. You are better able to carry the poor

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beast than he is to carry you."

"Anything to please you sir," said the father. "We will try." So he and his son got down from the donkey. They tied the animal's legs together. They took a pole. They tried to carry him on their shoulders over a bridge that led to the marketplace.

This was such an odd sight that crowds of people gathered around to see it. They laughed at it.

The donkey did not like to be tied up. He kicked so wildly that he broke the rope. He tumbled off the pole into the water. Then he ran away into the woods.

With this, the father and his son hung down their heads. They made their way home again. They learned that by trying to please everybody, they had pleased nobody. They lost the donkey too.

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B

THE FATHER, HIS SON, AND THEIR DONKEY

A father and his son were taking their donkey to town to sell him at the marketplace. They had not gone very far (when/mate/teach) they met a group of pretty maidens (see/who/in) were coming back from the town.

(Or/See/The) young girls were talking and laughing. (Book/Then/Slip) one of them cried out, "Look (pitch/farm/there). Did you ever see such fools? (They/Most/Road) are walking along side the donkey (fence/when/torch) they could be riding it."

When (so/all/the) father heard this, he told his (for/the/son) to get upon the donkey. The (father/close/letter) continued to stroll along merrily. They traveled (of/cat/a) little further down the road. Soon (told/they/load) came upon a group of old (oak/men/see) talking.

"There," said one of them, "(Lamb/Roast/That) proves what I was saying. No respect (a/is/for) shown to old age in these (tip/lock/days). Do you see that lazy young (new/key/boy) riding the donkey? His father has (to/as/on) walk. You should get down and (let/fort/so) your father ride!"

So the son (trap/let/got) down from the donkey. The father (took/same/fast) his place. They had not gone (me/so/far) when they came upon a group (by/son/of) women and children.

"Why, you lazy (in/tea/old) fellow! You should be ashamed," cried several (women/even/pencil) at once. "How can you ride (seek/upon/told) the beast? That poor little boy (pick/can/see) hardly keep up with you." So (the/by/ate) good-natured father

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pulled his son up (yellow/friend/behind) him.

By now they had almost reached (see/the/more) town. "Tell me friend," said a townsman. "(Do/Is/At) you own that donkey?" "Why yes," (form/meet/said) the father. "Well, I don't think (so/boy/for)," said the townsman. "You overwork him. (If/Can/You) two are strong. You are better (able/form/teak) to carry the poor beast than (kit/or/he) is to carry you."

"Anything to (please/token/spill) you sir," said the father. "We (for/will/make) try." So he and his son (tea/tan/got) down from the donkey. They tied (the/for/is) animal's legs together. They took a (sore/teach/pole). They tried to carry him on (their/book/fill) shoulders over a bridge that led (tea/try/to) the marketplace.

This was such an (more/odd/led) sight that crowds of people gathered (around/spill/please) to see it. They laughed at (an/it/so).

The donkey did not like to (no/be/in) tied up. He kicked so wildly (flow/pop/that) he broke the rope. He tumbled (off/sort/pick) the pole into the water. (Post/Glass/Then) he ran away into the woods.

(With/Post/Call) this, the father and his son (most/hung/here) down their heads. They made their (met/way/sort) home again. They learned that by (sickly/former/trying) to please everybody, they had pleased (nobody/toward/clean). They lost the donkey too.

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Student ______________________ Teacher ____________________

Date ________________________ Examiner ___________________

THE FATHER, HIS SON, AND THEIR DONKEY (B)

1. Where were the father and son taking the donkey?

____

2. What were they going to do with the donkey?

____

3. Why did the girls think the father and son were foolish?

____

4. What did the father do after hearing the girls?

____

5. Who did the old men think should be riding the donkey?

____

6. What did the father do after hearing the old men?

____

7. Why did the townsman think they did not own the donkey?

____

8. How did the father and son try to carry the donkey?

____

9. What did the people do when the father, son, and donkey came into the marketplace?

____

10. What did the donkey do after he was tied up?

____

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Name ______________________ Teacher ______________________

Date ______________________

C

A TEST OF SKILL

Once there lived a chief who had three sons. They all were fine, strong young men. They were very smart too. But often their father wondered which of the sons was the most clever.

One day his advisors gathered for a meeting. The chief looked around at the group of wise men. He asked them to help him decide who was the most clever of his three sons.

"Come over to this oak tree," he said to his advisors. "Have my three sons brought there right away." After a few moments the three young men came. Each son had a horse.

"My sons," said the chief, "I want each of you to get on your horse. I want each of you to show your skill to all of my advisors. You may do what you please. But when you reach this oak tree, you must do a trick. The trick will show us how strong and clever you are."

The three sons got on their horses. They rode to the end of a long path leading to the oak tree. They got ready to show their strength.

Galloping fast, the first son rode right to the oak tree. He moved neither to the right nor left. He held his spear high. He threw it into the trunk with such force that it made a big hole.

Then to everyone's surprise, the first son jumped after the spear. He leaped through the hole, horse and all. He made a perfect landing on the other side.

The people watching shouted their approval with loud cheers. "Surely," they said, "no one could do better than that."

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Then the second son came galloping right at the tree. He carried no sword. The people were afraid he might crash into the tree. But suddenly his horse rose in the air like an arrow. They flew right over the oak tree.

The rider and horse landed unhurt on the other side. The crowd laughed with pleasure and surprise. "Surely the third son will not be able to do better than this," they said to each other. Everyone held their breath.

The youngest son came riding toward the tree. As he reached it, he grabbed the branches in both hands. He dug his heels into his horse. He pulled the whole tree from the ground, roots and all.

Then he rode up to his father. He was waving the tree and smiling. The crowd roared their applause for the most clever son.

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C

A TEST OF SKILL

Once there lived a chief who had three sons. They all were fine, strong young (too/men/for). They were very smart too. But (place/ticks/often) their father wondered which of the (sons/told/mine) was the most clever.

One day (ate/his/for) advisors gathered for a meeting. The chief (looked/place/friend) around at the group of wise (time/sold/men). He asked them to help him (decide/yellow/rather) who was the most clever of (hit/his/for) three sons.

"Come over to this (cot/oak/sip) tree," he said to his advisors. "(Sort/Tart/Have) my three sons brought there (fill/right/mood) away." After a few moments the (three/seek/form) young men came. Each son had (so/it/a) horse.

"My sons," said the chief, "(I/Too/Not) want each of you to get (It/on/see) your horse. I want each of (see/you/for) to show your skill to all (in/of/to) my advisors. You may do what (you/see/tool) please. But when you reach this (ship/feel/oak) tree, you must do a trick. (The/Sick/Told) trick will show us how strong (pick/and/mat) clever you are."

The three sons (this/at/got) on their horses. They rode to (the/put/will) end of a long path leading (is/for/to) the oak tree. They got ready (to/as/on) show their strength.

Galloping fast, the (scope/first/stage) son rode right to the oak (show/that/tree). He moved neither to the right (nor/ate/fit) left. He held his spear high. (Has/He/At) threw it into the trunk with (such/drag/bust) force that it made a big (this/proud/hole).

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Then to everyone's surprise, the first (with/son/that) jumped after the spear. He leaped through (sip/and/the) hole, horse and all. He made (by/to/a) perfect landing on the other side.

(The/Talk/Rate) people watching shouted their approval with (air/loud/seat) cheers. "Surely," they said, "no one (risk/could/later) do better than that."

Then the (rather/amount/second) son came galloping right at the (tree/level/walk). He carried no sword. The people (malt/were/help) afraid he might crash into the (five/stole/tree). But suddenly his horse rose in (the/have/sit) air like an arrow. They flew (drug/value/right) over the oak tree.

The rider (that/and/hold) horse landed unhurt on the other (cause/legal/side). The crowd laughed with pleasure and surprise. "(Amount/Surely/Dollar) the third son will not be (able/since/all) to do better than this," they (tips/been/said) to each other. Everyone held their (yellow/breath/locate).

The youngest son came riding toward (fall/shoe/the) tree. As he reached it, he grabbed (the/cash/who) branches in both hands. He dug (are/rate/his) heels into his horse. He pulled (were/the/air) whole tree from the ground, roots (and/fat/of) all.

Then he rode up to (can/four/his) father. He was waving the tree (cent/and/part) smiling. The crowd roared their applause (top/fund/for) the most clever son.

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Student ______________________ Teacher ______________________

Date ______________________ Examiner ______________________

A TEST OF SKILL (C)

1. How many sons did the chief have?

____

2. What did the father wonder about his three sons?

____

3. Where did the wise men tell the sons to come?

____

4. What did the sons bring with them to the oak tree?

____

5. What did the chief tell his sons to do when they reached the oak tree?

____

6. What did the first son do after he made a hole in the tree?

____

7. What did the second son do when he reached the tree?

____

8. What did the crowd think after the second son had finished?

____

9. What did the third son do to the tree?

____

10. Which son was the most clever?

____

Name________________________ Teacher________________

Date________________

D

THE DRAGON'S TEARS

Far away in a strange country there lived a dragon. The dragon's home was in a deep mountain cave. His eyes shone out like headlights from the cave.

Very often, the people living nearby would gather in the evening by the fire. Someone would say, "What a terrible dragon is living near us!" And another would agree, saying, "Someone should kill him."

Whenever children were told about the dragon, they were afraid. But there was one little boy who was never afraid. All the neighbors said, "Isn't he a funny little boy?"

It was almost time for this funny little boy's birthday. His mother asked him, "Whom would you like to invite to your birthday party?" Then that little boy said, "Mother, I would like to ask the dragon."

His mother was very much surprised and asked, "Are you joking?" "No," said the little boy very seriously. "I mean what I say. I want to invite the dragon."

Sure enough, on the day before his birthday, the little boy went quietly out of his house. He walked and he walked and he walked. He got to the mountain where the dragon lived. "Hello, Hello. Mr. Dragon," the little boy called down the valley in his loudest voice.

"What's the matter? Who's calling me?" roared the dragon. He came out of his cave.

Then the little boy said, "Tomorrow is my birthday. There will

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be lots of good things to eat. Please come to my party. I came all the way to invite you."

At first the dragon couldn't believe his ears. He kept roaring at the boy. But the boy wasn't afraid at all. He kept saying, "Please, Mr. Dragon, please come to my party." Finally the dragon understood that the boy meant what he said. The boy was really asking him, a dragon, to his birthday party.

Then the dragon stopped roaring and began to cry. "What a happy thing to happen to me," the dragon sobbed. "I never had a kind invitation from anyone before." The dragon's tears flowed and flowed until at last they became a river.

Then the dragon said, "Come, climb on my back and I'll give you a ride home." The boy climbed bravely onto the back of the big dragon. Away the dragon went, swimming down the river of his own tears.

But as he went, by some magic, his body changed its size and shape. And suddenly, what do you know! The little boy was sailing bravely down the river toward home. He was the captain of a dragon-steamboat!

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D

THE DRAGON'S TEARS

Far away in a strange country there lived a dragon. The dragon's home was in a (sort/deep/late) mountain cave. His eyes shone out (lost/set/like) headlights from the cave.

Very often, (the/to/has) people living nearby would gather in (less/the/well) evening by the fire. Someone would (the/my/say), "What a terrible dragon is living (near/that/memo) us!" And another would agree, saying, "Someone (yellow/rather/should) kill him."

Whenever children were told (about/best/year) the dragon, they were afraid. But (accept/there/pages) was one little boy who was (sign/sport/never) afraid. All the neighbors said, "Isn't (he/no/too) a funny little boy?"

It was (please/almost/clothes) time for this funny little boy's birthday. (His/For/Ten) mother asked him, "Whom would you (riot/side/like) to invite to your birthday party?" (Tight/Then/Deck) that little boy said, "Mother, I (would/place/broke) like to ask the dragon."

His (speak/maybe/mother) was very much surprised and asked, "(We/Cry/Are) you joking?" "No," said the little (that/boy/for) very seriously. "I mean what I (cold/cook/say). I want to invite the dragon."

(Sure/Come/Year) enough, on the day before his birthday, (tap/the/say) little boy went quietly out of (lamp/call/his) house. He walked and he walked (one/and/sea) he walked. He got to the mountain (where/took/come) the dragon lived. "Hello, Hello. Mr. (Forty/Dragon/Piece)," the little boy called down the

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(valley/apple/trim) in his loudest voice.

"What's the (matter/yellow/white)? Who's calling me?" roared the dragon. (So/He/To) came out of his cave.

Then the little boy said, "Tomorrow (do/out/is) my birthday. There will be lots (do/at/of) good things to eat. Please come (sit/tray/to) my party. I came all the (cold/way/like) to invite you."

At first the (dragon/soda/light) couldn't believe his ears. He kept roaring (do/be/at) the boy. But the boy wasn't (afraid/place/toward) at all. He kept saying, "Please, Mr. Dragon, (appear/please/orange) come to my party." Finally the (street/phone/dragon) understood that the boy meant what (so/he/top) said. The boy was really asking (him/pay/one), a dragon, to his birthday party.

(Stake/Then/Price) the dragon stopped roaring and began (see/to/in) cry. "What a happy thing to (fellow/crash/happen) to me," the dragon sobbed. "I (knock/never/book) had a kind invitation from anyone (before/about/happen)." The dragon's tears flowed and flowed (issue/until/buzz) at last they became a river.

(Hold/Many/Then) the dragon said, "Come, climb on (so/my/it) back and I'll give you a (will/most/ride) home." The boy climbed bravely onto (the/red/pile) back of the big dragon. Away (more/new/the) dragon went, swimming down the river (it/of/tip) his own tears.

But as he (went/good/crazy), by some magic, his body changed (now/of/its) size and shape. And suddenly, what (do/not/in) you know! The little boy was sailing bravely (index/down/talk) the river toward home. He was (ask/tip/the) captain of a dragon-steamboat!

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